



HCAS Remedial Action Work Breakdown Structure (33 series) Fourth Level Burdened Cost Ranges

*Unit cost ranges are based on latest Central Collection Repository Database

Before the ranges were compiled, data were normalized to:

December, 1999
based on ENR Building Cost index
Area Cost Factor of 1.0
based on Military Area Cost Factors

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 00 00 00 HTRW REMEDIAL ACTION (CONSTRUCTION)						0
331 01 00 00 MOBILIZATION AND PREPARATORY WORK						0
331 01 01 00 Mobilization of Construction Equipment and Facilities	EA	\$6,386.44	\$14,434.90	\$34,644.57	42	42
331 01 01 01 Transport Vehicles Ownership / Operation	HR					0
331 01 01 02 Drivers	HR					0
331 01 01 03 Manifests	EA					0
331 01 01 04 Tolls	EA					0
331 01 01 05 Permits	EA					0
331 01 01 06 Escort Vehicles Ownership / Operation	HR					0
331 01 01 07 Construction Equipment Ownership / Operation	HR		\$369.31		1	1
331 01 01 08 Equipment Operators	HR		\$42.63		1	1
331 01 01 09 Initial Assembly and Setup	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 01 02 00	Mobilization of Personnel	EA	\$2,573.51	\$7,038.71	\$25,344.96	24	24
331 01 02 01	Relocation of Supervisory Personnel	EA		\$23,197.62		1	1
331 01 02 02	Site Visits / Meetings (During RA)	EA		\$4,606.16		1	1
331 01 03 00	Submittals / Implementation Plans	EA	\$2,747.36	\$7,780.04	\$17,398.42	27	29
331 01 03 01	Chemical Data Acquisition Plan (Sampling and Analysis Plan)	EA		\$4,164.90		2	2
331 01 03 02	Spill Control Plan	EA					0
331 01 03 03	Erosion Control Plan	EA		\$659.31		1	1
331 01 03 04	Environmental Protection Plan	EA		\$9,806.89		3	3
331 01 03 05	Sedimentation Control Plan	EA		\$13,075.10		1	1
331 01 03 06	Pollution Control Plan	EA					0
331 01 03 07	Letters of Commitment	EA					0
331 01 03 08	Site Safety and Health Plan (SSHP)	EA	\$1,577.91	\$3,057.58	\$5,688.40	7	7
331 01 03 09	Air Monitoring Plan	EA		\$3,148.16		2	2
331 01 03 10	Traffic Control Plan	EA					0
331 01 03 11	Site Security Plan	EA					0
331 01 03 12	Contaminated Water Storage and Treatment Plan	EA					0
331 01 03 13	General Site Work Plan	EA	\$3,848.86	\$8,574.36	\$11,307.66	5	5
331 01 03 14	Construction Quality Control Plan	EA	\$957.70	\$2,789.35	\$3,001.59	4	4
331 01 03 15	Materials Handling / Transportation / Disposal Plan	EA		\$4,135.97		3	3
331 01 03 16	Asbestos Hazard Abatement Plan	EA		\$2,649.23		2	2
331 01 03 17	Phase - Out Report	EA					0
331 01 03 18	Accident Prevention Plan	EA					0
331 01 03 19	Phase Safety Plan	EA					0
331 01 03 20	Emergency Response Plan	EA					0
331 01 03 21	Trial Burn Plan	EA					0
331 01 03 22	Sampling Plan	EA					0
331 01 03 23	Property Equipment Plan	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 01 03 24	Operational Plan	EA	\$38,259.63		1	1	
331 01 03 25	Location Survey & Mapping Plan	EA				0	
331 01 03 26	Work, Data, & Cost Management Plan	EA	\$5,314.54		1	1	
331 01 03 27	Chemical Accident or Incident Response and Assistance Plan	EA	\$3,998.69		2	2	
331 01 03 28	Performance and Compliance Monitoring Plan	EA	\$5,547.42		3	3	
331 01 03 29	Site Safety Submission	EA	\$1,635.22		1	1	
331 01 03 30	Other Technology Plans	EA				0	
331 01 03 31	Experience Record	EA	\$16,343.33		1	1	
331 01 03 32	Financial Statement	EA				0	
331 01 03 33	Small Business Plan	EA				0	
331 01 03 34	Subcontracting Plan	EA				0	
331 01 03 35	Construction Scheduling (CPM)	EA	\$4,510.52		1	1	
331 01 03 36	Training Certifications	EA				0	
331 01 03 37	Medical Surveillance Certifications	EA				0	
331 01 03 38	Permits	EA	\$4,384.29		1	1	
331 01 03 39	Patent Fees	EA				0	
331 01 04 00	Setup / Construct Temporary Facilities	EA	\$11,066.63	\$60,772.59	\$167,643.30	28	29
331 01 04 01	Office Trailers	EA	\$5,825.44	\$8,514.55	\$15,810.68	6	6
331 01 04 02	Storage Facilities	SF					0
331 01 04 03	Observation Tower	EA		\$20,505.46		1	1
331 01 04 04	Decontamination Facilities for Personnel	EA	\$21,290.20	\$30,569.18	\$41,997.01	5	7
331 01 04 05	Decontamination Facilities for Construction Equip / Vehicles	EA	\$20,226.79	\$39,348.63	\$78,222.18	3	4
331 01 04 06	Temporary Cover Structure Over Contaminated Area	SY					0
331 01 04 07	Lunch / Break Trailer	EA		\$50,194.82		1	1
331 01 04 08	Laundry Facilities	SF					0
331 01 04 09	Emergency Medical Trailer / Facilities	SF					0
331 01 04 10	Toilets	EA	\$921.27	\$1,612.50	\$1,881.91	4	4

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 01 04 11	Barricades	EA	\$125.52		1	1
331 01 04 12	Equipment Maintenance Shop	SF				0
331 01 04 13	Warehouses	SF				0
331 01 04 14	Government Trailers	EA	\$9,912.80		2	3
331 01 04 15	Guard Houses	EA				0
331 01 04 16	Truck Scales	EA				0
331 01 04 17	Wastewater Holding Tanks	EA	\$12,634.72		1	1
331 01 04 18	Fire Suppression Systems	EA				0
331 01 04 19	POL Dispensing Station	EA				0
331 01 04 20	Photographic Laboratory	EA				0
331 01 04 21	Housing	EA				0
331 01 04 22	Shop Facilities	SF				0
331 01 04 23	Aggregate Surfacing	TON	\$8.97		1	1
331 01 04 24	Security Fencing	LF	\$13.66	\$34.23	\$40.91	5
331 01 04 25	Roads and Parking	SY		\$18.16		2
331 01 04 26	Culverts	LF				0
331 01 04 27	Walks	SF				0
331 01 04 28	Signs	EA	\$605.83	\$1,010.86	\$1,253.99	4
331 01 04 29	Grading	SY		\$7.56		1
331 01 04 30	Erosion Control	SY		\$14.52		1
331 01 05 00	Construct Temporary Utilities	EA	\$2,457.61	\$17,281.72	\$82,885.40	14
331 01 05 01	Site Lighting	EA				0
331 01 05 02	Power Connection / Distribution	LF		\$3,632.45		3
331 01 05 03	Telephone / Communications Distribution	LF		\$3,777.57		3
331 01 05 04	Water Connection / Distribution	LF		\$46,532.20		2
331 01 05 05	Sewer Connection / Distribution	LF				0
331 01 05 06	Gas Connection / Distribution	LF				0

1/27/00

Page 4 of 94

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 01 06 00 Temporary Relocations / Roads / Structures / Utilities	EA		\$5,085.58		2	3
331 01 06 01 Roads	SY					0
331 01 06 02 Structures	SF					0
331 01 06 03 Utilities	LF					0
331 01 07 00 Construction Plant Erection	EA					0
331 01 07 01 Concrete Batch	EA					0
331 01 07 02 Block	EA					0
331 01 07 03 Precast	EA					0
331 01 07 04 Asphalt	EA					0
331 01 07 05 Quarry Crusher / Screens	EA					0
331 01 08 00 Institutional Controls	EA					0
331 01 09 00 Alternate Water Supply	EA					0
331 01 10 00 Population Relocation	EA					0
331 02 00 00 MONITORING, SAMPLING, TESTING, AND ANALYSIS						0
331 02 01 00 Meteorological Monitoring	EA		\$15,436.04		1	1
331 02 01 01 Meteorological Monitoring Station	EA		\$15,436.04		1	1
331 02 01 02 Instrument Shelters	EA					0
331 02 02 00 Radiation Monitoring	EA		\$22,574.50		3	3
331 02 02 01 Area Monitoring	MO					0
331 02 02 02 Personal Dosimetry	MO					0
331 02 02 03 Personnel Radiation Counting	MO					0
331 02 02 04 Dosimetry Systems	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 02 02 05	Diagnostics, Quality Assurance, and Calibration	MO				0	
331 02 03 00	Air Monitoring and Sampling	EA	\$195.84	\$7,110.40	\$10,063.87	12	13
331 02 03 01	Real Time	MO				0	
331 02 03 02	Non - Real Time	MO				0	
331 02 03 03	Asbestos	MO				0	
331 02 04 00	Monitoring Wells	EA	\$2,066.14	\$4,353.90	\$20,931.08	26	27
331 02 04 01	Drill Setup	EA				0	
331 02 04 02	Well Drilling	LF				0	
331 02 04 03	Handling of Cuttings / Water	GAL				0	
331 02 04 04	Casing	LF				0	
331 02 04 05	Casing Removal	LF				0	
331 02 04 06	Gravel Pack Material	CF				0	
331 02 04 07	Grout	CF				0	
331 02 04 08	Wet Well	EA				0	
331 02 04 09	Well Development / Testing	EA				0	
331 02 04 10	Well Screen	LF				0	
331 02 04 11	Capping	EA				0	
331 02 04 12	Well House	EA				0	
331 02 04 13	Well Pump and Controls / Instrumentation	EA				0	
331 02 04 14	Well Piping, Valves, Fittings	LF				0	
331 02 04 15	Flow Meter	EA				0	
331 02 04 16	Lysimeters	EA				0	
331 02 04 17	Electrical	EA				0	
331 02 04 18	Tests	EA				0	
331 02 04 19	Operation During Construction	MO				0	
331 02 04 20	Monitoring Well Abandonment	EA		\$3,301.49		1	1

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 02 05 00	Sampling Surface Water / Ground Water / Liquid Waste	EA	\$306.65	\$967.01	\$7,938.53	19	23
331 02 05 01	Surface Water	EA					0
331 02 05 02	Ground Water	EA		\$71.74		3	3
331 02 05 03	Liquid Waste	EA		\$167.40		1	1
331 02 05 04	Treatment Process Effluents	EA		\$401.07		1	1
331 02 05 05	Sample Shipping and Handling	EA					0
331 02 06 00	Sampling Soil and Sediment	EA	\$46.15	\$271.94	\$456.28	22	24
331 02 06 01	Surface Soil	EA	\$29.43	\$269.50	\$509.57	2	5
331 02 06 02	Sub - surface Soil	EA	\$46.15	\$162.00	\$252.50	4	5
331 02 06 03	Sediment / Sludge	EA		\$71.50		1	1
331 02 06 04	Sample Shipping and Handling	EA		\$19.50		1	1
331 02 07 00	Sampling Asbestos	EA					0
331 02 08 00	Sampling Radioactive Contaminated Media	EA		\$17,614.01		3	3
331 02 08 01	Surface Water	EA					0
331 02 08 02	Ground Water	EA					0
331 02 08 03	Liquid Water	EA					0
331 02 08 04	Surface Soil	EA					0
331 02 08 05	Sub - Surface Soil	EA					0
331 02 08 06	Sediment / Sludge	EA					0
331 02 08 07	Other Contaminated Media	EA					0
331 02 08 08	Sample Shipping and Handling	EA					0
331 02 09 00	Laboratory Chemical Analysis	EA	\$164.53	\$284.71	\$1,191.75	31	34
331 02 09 01	Air / Industrial Hygiene Analysis	EA					0
331 02 09 02	General Water Quality and Wastewater Analysis	EA					0
331 02 09 03	Priority Pollutant Analysis (all media)	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 02 09 04	Biomonitoring and Bioassay Analysis	EA				0	
331 02 09 05	Hazardous Waste (RCRA) Analysis	EA	\$1,041.73		1	1	
331 02 09 06	Miscellaneous Waste Analysis	EA	\$69,391.04		1	1	
331 02 09 07	Soil and Sediment Analysis	EA	\$312,157.09		1	1	
331 02 10 00	Radioactive Waste Analysis	EA	\$106,116.90		2	2	
331 02 10 01	Rad Analytical Animal Tissue / Bone	EA				0	
331 02 10 02	Rad Analytical Air	EA				0	
331 02 10 03	Rad Analytical Liquid	EA				0	
331 02 10 04	Rad Analytical Urine / Feces	EA				0	
331 02 10 05	Rad Analytical Vegetation / Sediment / Soil	EA				0	
331 02 10 06	Rad Analytical Miscellaneous	EA	\$3,063.86	\$3,063.86	\$3,063.86	1	6
331 02 11 00	Geotechnical Testing	EA	\$15.47	\$152.96	\$230.22	4	4
331 02 11 01	Classification	EA				0	
331 02 11 02	Shear Strength	EA				0	
331 02 11 03	Consolidation	EA				0	
331 02 11 04	Permeability	EA				0	
331 02 11 05	Geosynthetic Friction Testing	EA				0	
331 02 11 06	Field Tests	EA				0	
331 02 11 07	Sample Shipping and Handling	EA				0	
331 02 11 08	High Resolution Seismic Survey	EA				0	
331 02 11 09	Site Characterization and Analysis Penetrometer System (SCAPS)	EA				0	
331 02 12 00	Geotechnical Instrumentation	EA	\$8,569.71			3	3
331 02 12 01	Piezometers	EA				0	
331 02 12 02	Inclinometers	EA				0	
331 02 12 03	Settlement Gauges	EA				0	
331 02 12 04	Tiltmeters	EA				0	

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 02 12 05	Vadose Zone Monitoring	EA				0	
331 02 12 06	Sample Shipping and Handling	EA				0	
331 02 13 00	On - Site Laboratory Facilities	EA	\$192,868.00		3	3	
331 02 13 01	Mobilization	EA				0	
331 02 13 02	Rental / Ownership / Operation	MO				0	
331 02 13 03	Lab Equipment / Furnishings / Supplies	MO				0	
331 02 13 04	Lab Personnel	EA				0	
331 02 13 05	Demobilization	EA				0	
331 02 14 00	Off - Site Laboratory Facilities	EA	\$34,722.13		1	1	
331 03 00 00	SITWORK					0	
331 03 01 00	Demolition	SY	\$4.86	\$20.98	\$36.36	12	15
331 03 02 00	Clearing and Grubbing	ACR	\$3,094.53	\$5,509.34	\$21,421.64	25	29
331 03 03 00	Earthwork	CY	\$5.51	\$9.39	\$17.57	32	33
331 03 03 01	Rock Excavation	CY		\$29.48		1	1
331 03 03 02	Excavation / Fill	CY	\$4.31	\$10.25	\$11.64	8	14
331 03 03 03	Backfill	CY	\$5.10	\$7.57	\$12.84	8	10
331 03 03 04	Borrow	CY	\$6.88	\$14.46	\$70.97	7	7
331 03 03 05	Hauling	CY					0
331 03 03 06	Spreading	CY					0
331 03 03 07	Grading	SY	\$2.49	\$2.62	\$4.86	5	5
331 03 03 08	Compaction	CY		\$1.84		2	2
331 03 03 09	Scarification	CY					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 03 03 10	Harrowing	CY				0	
331 03 03 11	Tracking	CY				0	
331 03 03 12	Contour Furrowing	CY				0	
331 03 03 13	Stockpiling	CY				0	
331 03 03 14	Topsoil	CY		\$5.20	2	2	
331 03 03 15	Settlement Markers	EA		\$6,551.04	2	2	
331 03 03 16	Stripping	CY				0	
331 03 04 00	Roads / Parking / Curbs / Walks	SY	\$9.30	\$21.16	\$29.10	28	29
331 03 04 01	Bituminous Surfacing	TON				0	
331 03 04 02	Prime Coat / Tack Coat	GAL				0	
331 03 04 03	Aggregate Surfacing	TON	\$39.09	\$83.79	\$123.90	4	5
331 03 04 04	Concrete Surfacing	CY		\$223.55		3	3
331 03 04 05	Base Courses	TON		\$28.83		2	3
331 03 04 06	Geotextile Fabric	SY				0	
331 03 04 07	Guard Rails	LF				0	
331 03 04 08	Curbs and Gutters	LF		\$14.69		1	1
331 03 04 09	Sidewalks	SF				0	
331 03 04 10	Signs	EA				0	
331 03 04 11	Striping	LF				0	
331 03 04 12	Barricades	EA		\$1,202.20		1	1
331 03 05 00	Fencing	LF	\$12.40	\$18.93	\$29.74	23	25
331 03 05 01	Fencing	LF	\$8.05	\$24.70	\$40.08	6	9
331 03 05 02	Gates	EA		\$1,884.72		1	1
331 03 06 00	Electrical Distribution	LF	\$17.86	\$23.31	\$94.14	11	11
331 03 06 01	Relocations	LF		\$80.89		1	1
331 03 06 02	Power Distribution	LF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 03 06 03	Site Lighting Distribution	LF				0
331 03 06 04	Site Lighting Fixtures	EA				0
331 03 06 05	Transformers	EA				0
331 03 06 06	Connections / Fees	EA				0
331 03 07 00	Telephone / Communication Distribution	LF	\$7.65		1	1
331 03 07 01	Telephone Distribution	LF				0
331 03 07 02	Communication Systems	EA				0
331 03 07 03	Alarms	EA				0
331 03 07 04	Relocations	LF				0
331 03 07 05	Connections / Fees	EA				0
331 03 07 30	Tests	EA				0
331 03 08 00	Water / Sewer / Gas Distribution	LF	\$61.56	\$78.16	9	9
331 03 08 01	Water Distribution	LF	\$58.55		2	2
331 03 08 02	Sanitary Sewer Collection	LF	\$58.98		2	2
331 03 08 03	Gas Distribution	LF				0
331 03 08 04	Relocations	LF				0
331 03 08 05	Connections / Fees	EA				0
331 03 08 30	Tests	EA				0
331 03 09 00	Steam and Condensate Distribution	LF				0
331 03 09 01	Steam Distribution	LF				0
331 03 09 02	Condensate Distribution	LF				0
331 03 09 03	Relocations	LF				0
331 03 09 04	Connections / Fees	EA				0
331 03 09 30	Tests	EA				0
331 03 10 00	Fuel Line Distribution	LF	\$27.69		2	2

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 03 10 01 Fuel Line Distribution	LF					0
331 03 10 02 Relocations	LF					0
331 03 10 03 Connections / Fees	EA					0
331 03 10 30 Tests	EA					0
331 03 11 00 Storm Drainage / Subdrainage	LF	\$15.25	\$30.70	\$103.38	7	7
331 03 11 01 Pipe	LF		\$52.42		1	1
331 03 11 02 Manholes	EA					0
331 03 11 03 Inlets	EA		\$3,445.95		1	1
331 03 11 04 Drainage Structures	EA		\$3,295.78		1	1
331 03 11 30 Tests	EA					0
331 03 12 00 Permanent Cover Structure Over Contaminated Area	SF					0
331 03 13 00 Development of Borrow Pit / Haul Roads	ACR	\$40,342.64	\$69,184.04	\$73,276.17	4	6
331 03 14 00 Fuel Storage Tanks (New)	EA		\$53,747.71		3	3
331 03 14 01 Above - Ground Vault	EA	\$3,456.48	\$10,696.30	\$17,936.13	2	6
331 03 14 02 Underground Tanks	EA	\$12,283.45	\$53,747.71	\$90,454.50	3	15
331 04 00 00 ORDNANCE & EXPLOSIVE - CHEMICAL WARFARE MATERIAL (OE-CWM) R						0
331 04 01 00 Ordnance Removal and Destruction	ACR					0
331 04 01 01 Demolition for OE Removal	EA					0
331 04 01 02 Brush Clearing with OE	ACR					0
331 04 01 03 Blast Mats	EA					0
331 04 01 04 Blast Shields	EA					0
331 04 01 05 Surface Sweep (Visual)	ACR					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 04 01 06	Surface Sweep (Magnetometer)	ACR				0
331 04 01 07	Surface Sweep (Mag & Flag)	ACR				0
331 04 01 08	Excavate by Hand 0' - 2' Depth	ACR				0
331 04 01 09	Excavate with Heavy Equipment > 2' Depth	ACR				0
331 04 01 10	Sifting	CY				0
331 04 01 11	Removal of Chemical Warfare Material (CWM)	EA				0
331 04 01 12	OE On - Site Destruction	EA				0
331 04 01 13	OE Off - Site Destruction Transportation to DOD Facility	EA				0
331 04 01 14	Bunkers (Temporary)	EA				0
331 05 00 00	SURFACE WATER COLLECTION AND CONTROL					0
331 05 01 00	Berms / Dikes	LF	\$2.14		1	1
331 05 01 01	Rock Excavation	CY				0
331 05 01 02	Excavation / Fill	CY				0
331 05 01 03	Backfill	CY				0
331 05 01 04	Borrow	CY				0
331 05 01 05	Hauling	CY				0
331 05 01 06	Spreading	CY				0
331 05 01 07	Grading	SY				0
331 05 01 08	Compaction	CY				0
331 05 01 09	Scarification	CY				0
331 05 01 10	Harrowing	CY				0
331 05 01 11	Tracking	CY				0
331 05 01 12	Contour Furrowing	CY				0
331 05 01 13	Stockpiling	CY				0
331 05 01 14	Topsoil	CY				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 05 01 15 Settlement Markers	EA					0
331 05 01 16 Stripping	CY					0
331 05 01 17 Rip Rap	TON					0
331 05 02 00 Floodwalls	SF					0
331 05 02 01 Excavation	CY					0
331 05 02 02 Backfill	CY					0
331 05 02 03 Concrete	CY					0
331 05 03 00 Levees	LF					0
331 05 03 01 Rock Excavation	CY					0
331 05 03 02 Excavation / Fill	CY					0
331 05 03 03 Backfill	CY					0
331 05 03 04 Borrow	CY					0
331 05 03 05 Hauling	CY					0
331 05 03 06 Spreading	CY					0
331 05 03 07 Grading	SY					0
331 05 03 08 Compaction	CY					0
331 05 03 09 Scarification	CY					0
331 05 03 10 Harrowing	CY					0
331 05 03 11 Tracking	CY					0
331 05 03 12 Contour Furrowing	CY					0
331 05 03 13 Stockpiling	CY					0
331 05 03 14 Topsoil	CY					0
331 05 03 15 Settlement Markers	EA					0
331 05 03 16 Stripping	CY					0
331 05 03 17 Rip Rap	TON					0
331 05 04 00 Terraces and Benches	LF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 05 04 01	Rock Excavation	CY				0
331 05 04 02	Excavation / Fill	CY				0
331 05 04 03	Backfill	CY				0
331 05 04 04	Borrow	CY				0
331 05 04 05	Hauling	CY				0
331 05 04 06	Spreading	CY				0
331 05 04 07	Grading	SY				0
331 05 04 08	Compaction	CY				0
331 05 04 09	Scarification	CY				0
331 05 04 10	Harrowing	CY				0
331 05 04 11	Tracking	CY				0
331 05 04 12	Contour Furrowing	CY				0
331 05 04 13	Stockpiling	CY				0
331 05 04 14	Topsoil	CY				0
331 05 04 15	Settlement Markers	EA				0
331 05 04 16	Stripping	CY				0
331 05 04 17	Rip Rap	TON				0
331 05 05 00	Channels / Waterways (Soil / Rock)	LF				0
331 05 05 01	Rock Excavation	CY				0
331 05 05 02	Excavation / Fill	CY				0
331 05 05 03	Backfill	CY				0
331 05 05 04	Borrow	CY				0
331 05 05 05	Hauling	CY				0
331 05 05 06	Spreading	CY				0
331 05 05 07	Grading	SY				0
331 05 05 08	Compaction	CY				0
331 05 05 09	Scarification	CY				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 05 05 10	Harrowing	CY				0	
331 05 05 11	Tracking	CY				0	
331 05 05 12	Contour Furrowing	CY				0	
331 05 05 13	Stockpiling	CY				0	
331 05 05 14	Topsoil	CY				0	
331 05 05 15	Settlement Markers	EA				0	
331 05 05 16	Stripping	CY				0	
331 05 05 17	Rip Rap	TON				0	
331 05 06 00	Chutes or Flumes	LF				0	
331 05 06 01	Concrete	CY				0	
331 05 06 02	Bituminous	TON				0	
331 05 06 03	Rip Rap	TON				0	
331 05 06 04	Gabions	CY				0	
331 05 07 00	Sediment Barriers	LF	\$2.67	\$3.61	\$6.65	13	14
331 05 07 01	Silt Fence	LF		\$6.93		3	3
331 05 07 02	Straw Bales	LF					0
331 05 08 00	Storm Drainage	LF		\$237.49		1	1
331 05 08 01	Pipe	LF					0
331 05 08 02	Structures	EA					0
331 05 08 03	Gabions	CY					0
331 05 08 04	Rip Rap	TON					0
331 05 09 00	Lagoons / Basins / Tanks / Dikes / Pump System	ACR		\$197,434.50		2	2
331 05 09 01	Excavation	CY					0
331 05 09 02	Berm Embankment and Compaction	CY		\$34.94		2	2
331 05 09 03	Impervious Clay Liner	CY					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 05 09 04	Bentonite Liner	CY				0	
331 05 09 05	Concrete Liner	SY				0	
331 05 09 06	Geonet	SY	\$3.47		1	1	
331 05 09 07	Geotextile	SY				0	
331 05 09 08	Geomembrane (Synthetic)	SY				0	
331 05 09 09	Geocomposite	SY				0	
331 05 09 10	Granular Drainage Layer	TON				0	
331 05 09 11	Slope Protection	SY				0	
331 05 09 12	Floating Cover	SY				0	
331 05 09 13	Intake / Outlet Structure	EA				0	
331 05 09 14	Spillway	EA				0	
331 05 09 15	Storage Tanks w / Alarms	EA				0	
331 05 09 16	Piping	LF				0	
331 05 09 17	Manholes, Valves, Boxes	EA				0	
331 05 09 18	Hose	LF				0	
331 05 09 19	Holding Tank	EA				0	
331 05 09 20	Lift Station / Controls and Instrumentation	EA				0	
331 05 09 21	Drainage (Gravity)	EA				0	
331 05 09 30	Tests	EA				0	
331 05 10 00	Pumping / Draining / Collection	MGA	\$16.65	\$22.48	\$32.02	6	6
331 05 10 01	Pumping	GAL		\$0.02		2	2
331 05 10 02	Draining (Gravity)	GAL					0
331 05 10 03	Collection	GAL					0
331 05 11 00	Transport to Treatment Plant	MGA					0
331 05 12 00	Earthwork	CY		\$47.81		1	1
331 05 12 01	Rock Excavation	CY					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 05 12 02	Excavation / Fill	CY	\$47.81		1	1
331 05 12 03	Backfill	CY				0
331 05 12 04	Borrow	CY				0
331 05 12 05	Hauling	CY				0
331 05 12 06	Spreading	CY				0
331 05 12 07	Grading	SY				0
331 05 12 08	Compaction	CY				0
331 05 12 09	Scarification	CY				0
331 05 12 10	Harrowing	CY				0
331 05 12 11	Tracking	CY				0
331 05 12 12	Contour Furrowing	CY				0
331 05 12 13	Stockpiling	CY				0
331 05 12 14	Topsoil	CY				0
331 05 12 15	Settlement Markers	EA				0
331 05 12 16	Stripping	CY				0
331 05 12 17	Rip Rap	TON				0
331 05 13 00	Erosion Control	ACR	\$2,997.18	\$13,136.71	\$35,097.30	6
331 05 13 01	Seeding / Mulch / Fertilizer	ACR				0
331 05 13 02	Sodding	SY				0
331 05 13 03	Erosion Control Fabric	SY				0
331 05 13 04	Shrubs, Trees, Ground Cover	EA				0
331 05 13 05	Topsoil	CY				0
331 05 13 06	Mowing During Construction	ACR				0
331 05 14 00	Development of Borrow Pit / Haul Roads	ACR				0
331 06 00 00	GROUNDWATER COLLECTION AND CONTROL					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 06 01 00	Extraction and Injection Wells	EA	\$11,156.91	\$26,052.40	\$70,183.23	21	26
331 06 01 01	Drill Setup	EA					0
331 06 01 02	Well Drilling	LF					0
331 06 01 03	Handling of Cuttings / Water	GAL					0
331 06 01 04	Casing	LF					0
331 06 01 05	Casing Removal	LF					0
331 06 01 06	Gravel Pack Material	CF					0
331 06 01 07	Grout	CF					0
331 06 01 08	Wet Well	EA					0
331 06 01 09	Well Development / Testing	EA					0
331 06 01 10	Well Screen	LF					0
331 06 01 11	Capping	EA					0
331 06 01 12	Well House	EA					0
331 06 01 13	Pitless Adapter	EA					0
331 06 01 14	Well Pump and Controls / Instrumentation	EA					0
331 06 01 15	Well Piping, Valves, Fittings	LF					0
331 06 01 16	Flow Meter	EA					0
331 06 01 17	Holding Tank	EA					0
331 06 01 18	Electrical	EA					0
331 06 01 19	Operation During Construction	MO					0
331 06 01 20	Monitoring Well Abandonment	EA		\$108.56		1	1
331 06 01 30	Tests	EA					0
331 06 02 00	Subsurface Drainage / Collection	LF	\$68.28	\$71.32	\$193.30	5	5
331 06 02 01	Trench Excavation / Soil / Rock	CY					0
331 06 02 02	Dewatering for Construction	GAL					0
331 06 02 03	Sheeting and Shorting Trench	SF		\$11.50		1	1
331 06 02 04	Drain Piping, Fittings	LF		\$33.59		1	2

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 06 02 05	Aggregate Filter Material	TON	\$21.29		1	1
331 06 02 06	Geotextile Fabrics	SF				0
331 06 02 07	Backfill	CY	\$18.48		1	1
331 06 02 08	Synthetic Liner	SY				0
331 06 02 09	Manholes	EA	\$3,557.18		1	1
331 06 02 10	Observation Risers	EA				0
331 06 02 11	Lift Station, Pumps and Controls / Instrumentation	EA	\$43,149.02		1	1
331 06 02 12	Holding Tank	EA				0
331 06 02 13	Well Points	LF				0
331 06 02 30	Tests	EA				0
331 06 03 00	Slurry Walls	SF	\$6.06		1	1
331 06 03 01	Excavation	CY				0
331 06 03 02	Bentonite Slurry	CY				0
331 06 03 03	Soil - Bentonite Slurry	CY				0
331 06 03 04	Slurry Mixing / Circulation	CY				0
331 06 03 05	Cement - Bentonite Slurry	CY				0
331 06 03 06	Fill Material	CY				0
331 06 03 07	Backfill Placing	CY				0
331 06 03 30	Tests	EA				0
331 06 04 00	Grout Curtain	SF				0
331 06 04 01	Drill Grout Holes	LF				0
331 06 04 02	Grout Tube	LF				0
331 06 04 03	Grout Injection	CF				0
331 06 04 04	Vibrating Bean Grout Injection	CF				0
331 06 05 00	Sheet Piling	SF	\$44.19		2	2
331 06 05 01	Driven Sheet Piling (left in place)	SF	\$62.39		1	1

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 06 05 02 Driven Sheet Piling (pulled)	SF					0
331 06 06 00 Lagoons / Basins / Tanks / Dikes / Pump System	ACR		\$4,372.44		1	1
331 06 06 01 Excavation	CY		\$1.58		1	1
331 06 06 02 Berm Embankment and Compaction	CY					0
331 06 06 03 Impervious Clay Liner	CY					0
331 06 06 04 Bentonite Liner	CY					0
331 06 06 05 Concrete Liner	SY					0
331 06 06 06 Geonet	SY					0
331 06 06 07 Geotextile	SY		\$2.60		1	1
331 06 06 08 Geomembrane (Synthetic)	SY					0
331 06 06 09 Geocomposite	SY					0
331 06 06 10 Granular Drainage Layer	TON					0
331 06 06 11 Slope Protection	SY					0
331 06 06 12 Floating Cover	SY					0
331 06 06 13 Intake / Outlet Structure	EA					0
331 06 06 14 Spillway	EA					0
331 06 06 15 Storage Tanks w / Alarms	EA					0
331 06 06 16 Piping	LF					0
331 06 06 17 Manholes, Valves, Boxes	EA					0
331 06 06 18 Hose	LF					0
331 06 06 19 Holding Tank	EA					0
331 06 06 30 Tests	EA					0
331 06 07 00 Pumping / Collection	MGA	\$1.15	\$25.21	\$96.33	8	9
331 06 07 01 Pumping	GAL					0
331 06 07 02 Draining (Gravity)	GAL					0
331 06 07 03 Collection	GAL					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 06 08 00	Transport to Treatment Plant	MGA				0
331 06 09 00	Development of Borrow Pit / Haul Roads	ACR				0
331 06 09 20	Lift Station / Controls and Instrumentation	EA				0
331 06 09 21	Drainage (Gravity)	EA				0
331 07 00 00	AIR POLLUTION / GAS COLLECTION AND CONTROL					0
331 07 01 00	Gas / Vapor Collection Trench System	LF				0
331 07 01 01	Trench Excavation / Soil / Rock	CY				0
331 07 01 02	Sheeting and Shoring Trench	SF				0
331 07 01 03	Vertical Piping, Fittings	LF				0
331 07 01 04	Aggregate Filter Material	TON				0
331 07 01 05	Backfill	CY				0
331 07 01 06	Protective Trench Cover	LF				0
331 07 01 07	Monitoring Probes	EA				0
331 07 01 08	Synthetic Membrane	SF				0
331 07 01 09	Gas Collection Header / Fittings / Tanks	LF				0
331 07 01 10	Vacuum Blower / Compressor	EA				0
331 07 01 11	Flare / Flame Arrestor	EA				0
331 07 01 12	Valves, Boxes, Manholes	EA				0
331 07 01 13	Gas Control / Suppression	EA				0
331 07 01 30	Tests	EA				0
331 07 02 00	Gas / Vapor Collection Well System	EA	\$3,108.22		1	1
331 07 02 01	Well Drilling	LF				0
331 07 02 02	Handling of Cuttings / Water	GAL				0
331 07 02 03	Casing	LF				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 07 02 04	Well Screen	LF				0	
331 07 02 05	Drilling Mud	CY				0	
331 07 02 06	Sand	CF				0	
331 07 02 07	Grout Cement	CF				0	
331 07 02 08	Well House	EA				0	
331 07 02 09	Aggregate Filter Material	TON				0	
331 07 02 10	Vertical Piping, Fittings	LF				0	
331 07 02 11	Monitoring Probes	EA				0	
331 07 02 12	Gas Collection Header / Fittings / Tanks	LF				0	
331 07 02 13	Vacuum Blower / Compressor	EA				0	
331 07 02 14	Flare / Flame Arrestor	EA				0	
331 07 02 15	Valves, Boxes, Manholes	EA				0	
331 07 02 16	Gas Control / Suppression	EA				0	
331 07 02 30	Tests	EA				0	
331 07 03 00	Gas / Vapor Collection at Lagoon Cover	SY				0	
331 07 03 01	Flexible Gas Collection Hose	LF				0	
331 07 03 02	Gas Collection Chambers / Tank	EA				0	
331 07 03 03	Vacuum Blower / Compressor	EA				0	
331 07 03 04	Flare / Flame Arrestor	EA				0	
331 07 03 05	Valves, Boxes, Manholes	EA				0	
331 07 03 06	Gas Control / Suppression	EA				0	
331 07 03 30	Tests	EA				0	
331 07 04 00	Fugitive Dust / Vapor / Gas Emissions Control	ACR	\$771.71	\$13,902.67	\$30,686.45	5	5
331 07 04 01	Sprayed Chemical Dust Suppressants	ACR					0
331 07 04 02	Wind Fences / Screens	LF					0
331 07 04 03	Synthetic Covers over Waste Piles	SF					0
331 07 04 04	Water Spraying	ACR		\$771.71		1	1

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 08 00 00 SOLIDS COLLECTION AND CONTAINMENT						0
331 08 01 00 Contaminated Soil Collection	CY	\$6.62	\$10.35	\$36.55	22	24
331 08 01 01 Rock Excavation	CY		\$3.54		1	1
331 08 01 02 Excavation	CY	\$8.43	\$10.85	\$31.47	3	5
331 08 01 03 Hauling	CY					0
331 08 01 04 Stockpiling	CY					0
331 08 02 00 Waste Containment, Portable (Furnish / Fill)	CY	\$2.16	\$22.05	\$40.25	4	6
331 08 02 01 Bulk Containers / Roll - Offs	CY					0
331 08 02 02 Drums	EA		\$108.90		1	1
331 08 02 03 Bags	CY					0
331 08 02 04 Liners	EA		\$16,655.51		1	1
331 08 03 00 Transport to Treatment Plant	CY	\$3.27	\$16.84	\$28.45	5	9
331 08 04 00 Radioactive Specific Waste Containment (Furnish / Fill)	CY					0
331 08 04 01 LSA (Low Specific Activity) Shipping Containers	EA					0
331 08 04 02 Miscellaneous Type A Containers	EA					0
331 08 04 03 Type B Shipping Containers	EA					0
331 08 04 04 Temporary On - Site Storage	EA					0
331 08 05 00 Capping of Contaminated Area / Waste Pile (Soil / Asphalt Cap)	ACR	\$55,197.91	\$199,199.00	\$301,862.19	11	13
331 08 05 01 Gas Collection Layer	CY					0
331 08 05 02 Gas Vent Pipes	EA					0
331 08 05 03 Impervious Clay Layer	CY		\$6.28		1	1
331 08 05 04 Bentonite Layer	CY					0

1/27/00

Page 24 of 94

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 08 05 05 Granular Drainage Layer	TON					0
331 08 05 06 Geonet	SY		\$4.67		1	1
331 08 05 07 Geotextile	SY	\$1.98	\$2.09	\$2.87	3	4
331 08 05 08 Geomembrane (Synthetic)	SY		\$8.33		2	2
331 08 05 09 Geocomposite	SY					0
331 08 05 10 Geogrid	SY		\$1.63		1	1
331 08 05 11 Seeding / Mulch / Fertilizer	ACR		\$2,056.98		3	3
331 08 05 12 Erosion Control Fabric	SY		\$0.26		1	1
331 08 05 13 Soil / Topsoil Cover Layer	CY	\$15.50	\$20.09	\$24.39	4	6
331 08 05 14 Crushed Rock	TON		\$37.65		1	1
331 08 05 15 Drainage / Leachate Piping	LF		\$19.03		1	1
331 08 05 16 Manholes / Sumps	EA					0
331 08 05 17 Lift Station, Pumps and Controls / Instrumentation	EA					0
331 08 05 18 Test Fill Section	EA					0
331 08 05 19 Radon Barrier	SY					0
331 08 05 20 Asphalt / Concrete Paving Cover	SY					0
331 08 05 30 Tests	EA					0
331 08 06 00 Nuclear Waste Densification (Dynamic Compaction)	CY					0
331 08 07 00 Development of Borrow Pit / Haul Roads	ACR					0
331 09 00 00 LIQUIDS / SEDIMENTS / SLUDGES COLLECTION AND CONTAINMENT						0
331 09 01 00 Dredging / Excavating	CY		\$16.57		2	2
331 09 01 01 Hydraulic	CY					0
331 09 01 02 Mechanical	CY		\$13.84		1	1
331 09 01 03 Pneumatic	CY					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 09 02 00 Industrial Vacuuming	CY					0
331 09 03 00 Waste Containment, Portable (Furnish / Fill)	MGA		\$42.60		1	1
331 09 03 01 Bulk Liquid Containers / Roll - Offs	GAL					0
331 09 03 02 Drums	GAL					0
331 09 03 03 Liners	EA					0
331 09 04 00 Transport to Treatment Plant	MGA	\$71.97	\$452.46	\$2,166.28	7	8
331 09 05 00 Radioactive Specific Waste Containment (Furnish / Fill)	MGA					0
331 09 05 01 LSA (Low Specific Activity) Shipping Containers	EA					0
331 09 05 02 Miscellaneous Type A Containers	EA					0
331 09 05 03 Type B Shipping Containers	EA					0
331 09 05 04 Temporary On - Site Storage	EA					0
331 09 06 00 Pumping / Draining / Collection	MGA	\$30.76	\$506.22	\$1,832.46	7	9
331 09 06 01 Pumping	GAL		\$0.02		1	1
331 09 06 02 Draining (Gravity)	GAL					0
331 09 06 03 Collection	GAL					0
331 09 07 00 Lagoons / Basins / Tanks / Dikes / Pump System	ACR		\$166,738.50		1	2
331 09 07 01 Excavation	CY					0
331 09 07 02 Berm Embankment and Compaction	CY					0
331 09 07 03 Impervious Clay Liner	CY					0
331 09 07 04 Bentonite Liner	CY					0
331 09 07 05 Concrete Liner	SY					0
331 09 07 06 Geonet	SY					0
331 09 07 07 Geotextile	SY					0
331 09 07 08 Geomembrane (Synthetic)	SY					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 09 07 09	Geocomposite	SY				0	
331 09 07 10	Granular Drainage Layer	TON				0	
331 09 07 11	Slope Protection	SY				0	
331 09 07 12	Floating Cover	SY				0	
331 09 07 13	Intake / Outlet Structure	EA				0	
331 09 07 14	Spillway	EA				0	
331 09 07 15	Storage Tanks w / Alarms	EA				0	
331 09 07 16	Piping	LF				0	
331 09 07 17	Manholes, Valves, Boxes	EA				0	
331 09 07 18	Hose	LF				0	
331 09 07 19	Holding Tank	EA				0	
331 09 07 20	Lift Station / Controls and Instrumentation	EA				0	
331 09 07 21	Drainage (Gravity)	EA				0	
331 09 07 30	Tests	EA				0	
331 09 08 00	Development of Borrow Pit / Haul Roads	ACR				0	
331 10 00 00	DRUMS / TANKS / STRUCTURES / MISCELLANEOUS DEMOLITION AND RE					0	
331 10 01 00	Drum Removal	EA	\$72.19	\$2,430.04	\$6,109.85	6	6
331 10 01 01	Machine Excavation (Buried Drums)	CY					0
331 10 01 02	Hand Excavation (Buried Drums)	CY					0
331 10 01 03	Handling and Removing	EA		\$256.85		1	1
331 10 01 04	Cleaning	EA					0
331 10 01 05	Crushing / Shredding	EA		\$4.11		1	1
331 10 01 06	Drum Overpacks	EA		\$256.85		1	1
331 10 01 07	Pump Liquids and Sludge	GAL					0
331 10 01 08	Purge Drums	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 10 01 09 Cut Drums	EA					0
331 10 02 00 Tank Removal	EA	\$2,565.63	\$6,376.24	\$17,148.04	13	23
331 10 02 01 Machine Excavation (Buried Tanks)	CY					0
331 10 02 02 Hand Excavation (Buried Tanks)	CY					0
331 10 02 03 Tank Cutting / Demolition	EA		\$12,324.30		1	2
331 10 02 04 Handling and Removing	EA		\$1,559.83		1	1
331 10 02 05 Cleaning	EA		\$3,056.40		1	1
331 10 02 06 Crushing	EA					0
331 10 02 07 Pump Liquids and Sludge	GAL					0
331 10 02 08 Purge Tanks	EA					0
331 10 02 09 Concrete Vault Removal	EA					0
331 10 03 00 Structure Removal	SF	\$7.21	\$12.33	\$42.24	11	11
331 10 03 01 Decontamination	SF	\$21.40	\$23.91	\$26.42	2	5
331 10 03 02 Demolition	SF		\$2.77		1	2
331 10 04 00 Asbestos Abatement	SF	\$3.77	\$11.27	\$21.05	9	9
331 10 04 01 Preparatory Abatement Work	SF		\$6.28		1	2
331 10 04 02 Abatement	SF		\$7.27		2	2
331 10 04 03 Post - Abatement Work	SF					0
331 10 05 00 Piping and Pipeline Removal	LF		\$15.00		2	2
331 10 05 01 Machine Excavation	CY					0
331 10 05 02 Hand Excavation	CY					0
331 10 05 03 Concrete Pipe Pits	CY					0
331 10 05 04 Pipe Removal	LF		\$16.08		1	2
331 10 05 05 Handling	LF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 10 06 00	Radioactive Specific Waste Containment (Furnish / Fill)	CY				0	
331 10 06 01	LSA (Low Specific Activity) Shipping Containers	EA				0	
331 10 06 02	Miscellaneous Type A Containers	EA				0	
331 10 06 03	Type B Shipping Containers	EA				0	
331 10 06 04	Temporary On - Site Storage	EA				0	
331 10 07 00	Miscellaneous Items	ACR	\$3,823.23	\$43,708.57	\$66,289.59	7	8
331 10 07 01	Debris Removal	ACR		\$6.39		1	1
331 10 07 02	Pressurized Gas Cylinders Removal	EA				0	0
331 10 07 03	Pavement Removal	SY				0	0
331 10 08 00	Contaminated Paint Removal	SF				0	0
331 10 08 01	Physical Removal	SF				0	0
331 10 08 02	Chemical Removal	SF				0	0
331 10 08 03	Thermal Removal	SF				0	0
331 10 08 04	Encapsulation	SF				0	0
331 11 00 00	BIOLOGICAL TREATMENT						0
331 11 01 00	Activated Sludge (Seq Batch Reactors)	MGA	\$3.14	\$12.87	\$14.05	3	6
331 11 01 01	Solids Preparation and Handling	CY					0
331 11 01 02	Liquids Preparation and Handling	GAL					0
331 11 01 03	Vapor / Gas Preparation and Handling	CF					0
331 11 01 04	Pads / Foundations / Spill Control	SF					0
331 11 01 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 01 06	Startup	EA					0
331 11 01 07	Demobilization of Portable Treatment Plant	EA					0
331 11 01 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 01 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 01 10 Testing	EA					0
331 11 01 11 Permits	EA					0
331 11 01 12 Training	EA					0
331 11 01 13 Final Closure	EA					0
331 11 02 00 Rotating Biological Contractors	MGA					0
331 11 02 01 Solids Preparation and Handling	CY					0
331 11 02 02 Liquids Preparation and Handling	GAL					0
331 11 02 03 Vapor / Gas Preparation and Handling	CF					0
331 11 02 04 Pads / Foundations / Spill Control	SF					0
331 11 02 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 02 06 Startup	EA					0
331 11 02 07 Demobilization of Portable Treatment Plant	EA					0
331 11 02 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 11 02 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 02 10 Testing	EA					0
331 11 02 11 Permits	EA					0
331 11 02 12 Training	EA					0
331 11 02 13 Final Closure	EA					0
331 11 03 00 Land Treatment / Farming (Solid Phase Biodegradation)	CY		\$8.12		1	1
331 11 03 01 Solids Preparation and Handling	CY					0
331 11 03 02 Liquids Preparation and Handling	GAL					0
331 11 03 03 Vapor / Gas Preparation and Handling	CF					0
331 11 03 04 Pads / Foundations / Spill Control	SF					0
331 11 03 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 03 06 Startup	EA					0
331 11 03 07 Demobilization of Portable Treatment Plant	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 03 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 11 03 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 11 03 10	Testing	EA				0
331 11 03 11	Permits	EA				0
331 11 03 12	Training	EA				0
331 11 03 13	Final Closure	EA				0
331 11 04 00	In - Situ Biodegradation / Bioreclamation	CY				0
331 11 04 01	Solids Preparation and Handling	CY				0
331 11 04 02	Liquids Preparation and Handling	GAL				0
331 11 04 03	Vapor / Gas Preparation and Handling	CF				0
331 11 04 04	Pads / Foundations / Spill Control	SF				0
331 11 04 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 11 04 06	Startup	EA				0
331 11 04 07	Demobilization of Portable Treatment Plant	EA				0
331 11 04 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 11 04 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 11 04 10	Testing	EA				0
331 11 04 11	Permits	EA				0
331 11 04 12	Training	EA				0
331 11 04 13	Final Closure	EA				0
331 11 05 00	Trickling Filters	MGA				0
331 11 05 01	Solids Preparation and Handling	CY				0
331 11 05 02	Liquids Preparation and Handling	GAL				0
331 11 05 03	Vapor / Gas Preparation and Handling	CF				0
331 11 05 04	Pads / Foundations / Spill Control	SF				0
331 11 05 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 11 05 06	Startup	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 05 07	Demobilization of Portable Treatment Plant	EA				0
331 11 05 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 11 05 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 11 05 10	Testing	EA				0
331 11 05 11	Permits	EA				0
331 11 05 12	Training	EA				0
331 11 05 13	Final Closure	EA				0
331 11 06 00	Biological Lagoons	MGA				0
331 11 06 01	Solids Preparation and Handling	CY				0
331 11 06 02	Liquids Preparation and Handling	GAL				0
331 11 06 03	Vapor / Gas Preparation and Handling	CF				0
331 11 06 04	Pads / Foundations / Spill Control	SF				0
331 11 06 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 11 06 06	Startup	EA				0
331 11 06 07	Demobilization of Portable Treatment Plant	EA				0
331 11 06 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 11 06 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 11 06 10	Testing	EA				0
331 11 06 11	Permits	EA				0
331 11 06 12	Training	EA				0
331 11 06 13	Final Closure	EA				0
331 11 07 00	Composting	CY				0
331 11 07 01	Solids Preparation and Handling	CY				0
331 11 07 02	Liquids Preparation and Handling	GAL				0
331 11 07 03	Vapor / Gas Preparation and Handling	CF				0
331 11 07 04	Pads / Foundations / Spill Control	SF				0
331 11 07 05	Mobilization / Setup of Portable Treatment Plant	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 07 06 Startup	EA					0
331 11 07 07 Demobilization of Portable Treatment Plant	EA					0
331 11 07 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 11 07 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 07 10 Testing	EA					0
331 11 07 11 Permits	EA					0
331 11 07 12 Training	EA					0
331 11 07 13 Final Closure	EA					0
331 11 08 00 Sludge Stabilization - Aerobic	CY					0
331 11 08 01 Solids Preparation and Handling	CY					0
331 11 08 02 Liquids Preparation and Handling	GAL					0
331 11 08 03 Vapor / Gas Preparation and Handling	CF					0
331 11 08 04 Pads / Foundations / Spill Control	SF					0
331 11 08 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 08 06 Startup	EA					0
331 11 08 07 Demobilization of Portable Treatment Plant	EA					0
331 11 08 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 11 08 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 08 10 Testing	EA					0
331 11 08 11 Permits	EA					0
331 11 08 12 Training	EA					0
331 11 08 13 Final Closure	EA					0
331 11 09 00 Sludge Stabilization - Anaerobic	CY					0
331 11 09 01 Solids Preparation and Handling	CY					0
331 11 09 02 Liquids Preparation and Handling	GAL					0
331 11 09 03 Vapor / Gas Preparation and Handling	CF					0
331 11 09 04 Pads / Foundations / Spill Control	SF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 09 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 09 06 Startup	EA					0
331 11 09 07 Demobilization of Portable Treatment Plant	EA					0
331 11 09 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 11 09 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 09 10 Testing	EA					0
331 11 09 11 Permits	EA					0
331 11 09 12 Training	EA					0
331 11 09 13 Final Closure	EA					0
331 11 10 00 Genetically Engineered Organisms (White Rot Fungus)	CY					0
331 11 10 01 Solids Preparation and Handling	CY					0
331 11 10 02 Liquids Preparation and Handling	GAL					0
331 11 10 03 Vapor / Gas Preparation and Handling	CF					0
331 11 10 04 Pads / Foundations / Spill Control	SF					0
331 11 10 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 10 06 Startup	EA					0
331 11 10 07 Demobilization of Portable Treatment Plant	EA					0
331 11 10 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 11 10 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 10 10 Testing	EA					0
331 11 10 11 Permits	EA					0
331 11 10 12 Training	EA					0
331 11 10 13 Final Closure	EA					0
331 11 11 00 Slurry Biodegradation	CY					0
331 11 11 01 Solids Preparation and Handling	CY					0
331 11 11 02 Liquids Preparation and Handling	GAL					0
331 11 11 03 Vapor / Gas Preparation and Handling	CF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 11 04 Pads / Foundations / Spill Control	SF					0
331 11 11 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 11 06 Startup	EA					0
331 11 11 07 Demobilization of Portable Treatment Plant	EA					0
331 11 11 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 11 11 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 11 10 Testing	EA					0
331 11 11 11 Permits	EA					0
331 11 11 12 Training	EA					0
331 11 11 13 Final Closure	EA					0
331 11 12 00 Bioventing	SF					0
331 11 12 01 Solids Preparation and Handling	CY					0
331 11 12 02 Liquids Preparation and Handling	GAL					0
331 11 12 03 Vapor / Gas Preparation and Handling	CF					0
331 11 12 04 Pads / Foundations / Spill Control	SF					0
331 11 12 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 11 12 06 Startup	EA					0
331 11 12 07 Demobilization of Portable Treatment Plant	EA					0
331 11 12 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 11 12 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 11 12 10 Testing	EA					0
331 11 12 11 Permits	EA					0
331 11 12 12 Training	EA					0
331 11 12 13 Final Closure	EA					0
331 11 13 00 Bioslurping	SF					0
331 11 13 01 Solids Preparation and Handling	CY					0
331 11 13 02 Liquids Preparation and Handling	GAL					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 13 03	Vapor / Gas Preparation and Handling	CF				0
331 11 13 04	Pads / Foundations / Spill Control	SF				0
331 11 13 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 11 13 06	Startup	EA				0
331 11 13 07	Demobilization of Portable Treatment Plant	EA				0
331 11 13 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 11 13 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 11 13 10	Testing	EA				0
331 11 13 11	Permits	EA				0
331 11 13 12	Training	EA				0
331 11 13 13	Final Closure	EA				0
331 11 14 00	Biopile (Heap Pile Remediation)	CY				0
331 11 14 01	Solids Preparation and Handling	CY				0
331 11 14 02	Liquids Preparation and Handling	GAL				0
331 11 14 03	Vapor / Gas Preparation and Handling	CF				0
331 11 14 04	Pads / Foundations / Spill Control	SF				0
331 11 14 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 11 14 06	Startup	EA				0
331 11 14 07	Demobilization of Portable Treatment Plant	EA				0
331 11 14 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 11 14 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 11 14 10	Testing	EA				0
331 11 14 11	Permits	EA				0
331 11 14 12	Training	EA				0
331 11 14 13	Final Closure	EA				0
331 11 50 00	Construction of Permanent Plant Facility	EA				0
331 11 50 01	Substructure	SF				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 11 50 02	Superstructure	SF				0
331 11 50 03	Exterior Closure	SF				0
331 11 50 04	Roofing	SF				0
331 11 50 05	Interior Construction	SF				0
331 11 50 06	Interior Finishes	SF				0
331 11 50 07	Conveying Systems	SF				0
331 11 50 08	Plumbing	SF				0
331 11 50 09	HVAC	SF				0
331 11 50 10	Fire Protection System	SF				0
331 11 50 11	Electric Power and Lighting	SF				0
331 11 50 12	Electrical Systems	SF				0
331 11 50 13	Equipment	SF				0
331 11 50 14	Furnishings	SF				0
331 11 50 15	Special Construction	SF				0
331 12 00 00	CHEMICAL TREATMENT					0
331 12 01 00	Oxidation / Reduction	MGA	\$9.60		2	3
331 12 01 01	Solids Preparation and Handling	CY				0
331 12 01 02	Liquids Preparation and Handling	GAL				0
331 12 01 03	Vapor / Gas Preparation and Handling	CF				0
331 12 01 04	Pads / Foundations / Spill Control	SF				0
331 12 01 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 12 01 06	Startup	EA				0
331 12 01 07	Demobilization of Portable Treatment Plant	EA				0
331 12 01 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 12 01 09	O&M of Permanent Treatment Plant During Construction	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 12 01 10	Testing	EA				0
331 12 01 11	Permits	EA				0
331 12 01 12	Training	EA				0
331 12 01 13	Final Closure	EA				0
331 12 02 00	Solvent Extraction	MGA				0
331 12 02 01	Solids Preparation and Handling	CY				0
331 12 02 02	Liquids Preparation and Handling	GAL				0
331 12 02 03	Vapor / Gas Preparation and Handling	CF				0
331 12 02 04	Pads / Foundations / Spill Control	SF				0
331 12 02 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 12 02 06	Startup	EA				0
331 12 02 07	Demobilization of Portable Treatment Plant	EA				0
331 12 02 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 12 02 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 12 02 10	Testing	EA				0
331 12 02 11	Permits	EA				0
331 12 02 12	Training	EA				0
331 12 02 13	Final Closure	EA				0
331 12 03 00	Chlorination	MGA	\$40.94		1	1
331 12 03 01	Solids Preparation and Handling	CY				0
331 12 03 02	Liquids Preparation and Handling	GAL				0
331 12 03 03	Vapor / Gas Preparation and Handling	CF				0
331 12 03 04	Pads / Foundations / Spill Control	SF				0
331 12 03 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 12 03 06	Startup	EA				0
331 12 03 07	Demobilization of Portable Treatment Plant	EA				0
331 12 03 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 12 03 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 12 03 10 Testing	EA					0
331 12 03 11 Permits	EA					0
331 12 03 12 Training	EA					0
331 12 03 13 Final Closure	EA					0
331 12 04 00 Ozonation	MGA					0
331 12 04 01 Solids Preparation and Handling	CY					0
331 12 04 02 Liquids Preparation and Handling	GAL					0
331 12 04 03 Vapor / Gas Preparation and Handling	CF					0
331 12 04 04 Pads / Foundations / Spill Control	SF					0
331 12 04 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 12 04 06 Startup	EA					0
331 12 04 07 Demobilization of Portable Treatment Plant	EA					0
331 12 04 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 12 04 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 12 04 10 Testing	EA					0
331 12 04 11 Permits	EA					0
331 12 04 12 Training	EA					0
331 12 04 13 Final Closure	EA					0
331 12 05 00 Ion Exchange	MGA		\$28.60		2	3
331 12 05 01 Solids Preparation and Handling	CY					0
331 12 05 02 Liquids Preparation and Handling	GAL					0
331 12 05 03 Vapor / Gas Preparation and Handling	CF					0
331 12 05 04 Pads / Foundations / Spill Control	SF					0
331 12 05 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 12 05 06 Startup	EA					0
331 12 05 07 Demobilization of Portable Treatment Plant	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 12 05 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0	
331 12 05 09	O&M of Permanent Treatment Plant During Construction	MO				0	
331 12 05 10	Testing	EA				0	
331 12 05 11	Permits	EA				0	
331 12 05 12	Training	EA				0	
331 12 05 13	Final Closure	EA				0	
331 12 06 00	Neutralization	MGA	\$0.06	\$6.05	\$10.43	3	4
331 12 06 01	Solids Preparation and Handling	CY					0
331 12 06 02	Liquids Preparation and Handling	GAL					0
331 12 06 03	Vapor / Gas Preparation and Handling	CF					0
331 12 06 04	Pads / Foundations / Spill Control	SF					0
331 12 06 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 12 06 06	Startup	EA					0
331 12 06 07	Demobilization of Portable Treatment Plant	EA					0
331 12 06 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 12 06 09	O&M of Permanent Treatment Plant During Construction	MO					0
331 12 06 10	Testing	EA					0
331 12 06 11	Permits	EA					0
331 12 06 12	Training	EA					0
331 12 06 13	Final Closure	EA					0
331 12 07 00	Chemical Hydrolysis	MGA					0
331 12 07 01	Solids Preparation and Handling	CY					0
331 12 07 02	Liquids Preparation and Handling	GAL					0
331 12 07 03	Vapor / Gas Preparation and Handling	CF					0
331 12 07 04	Pads / Foundations / Spill Control	SF					0
331 12 07 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 12 07 06	Startup	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 12 07 07	Demobilization of Portable Treatment Plant	EA				0
331 12 07 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 12 07 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 12 07 10	Testing	EA				0
331 12 07 11	Permits	EA				0
331 12 07 12	Training	EA				0
331 12 07 13	Final Closure	EA				0
331 12 08 00	Ultraviolet Photolysis	MGA				0
331 12 08 01	Solids Preparation and Handling	CY				0
331 12 08 02	Liquids Preparation and Handling	GAL				0
331 12 08 03	Vapor / Gas Preparation and Handling	CF				0
331 12 08 04	Pads / Foundations / Spill Control	SF				0
331 12 08 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 12 08 06	Startup	EA				0
331 12 08 07	Demobilization of Portable Treatment Plant	EA				0
331 12 08 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 12 08 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 12 08 10	Testing	EA				0
331 12 08 11	Permits	EA				0
331 12 08 12	Training	EA				0
331 12 08 13	Final Closure	EA				0
331 12 09 00	Dehalogenation (Catalytic Dechlorination)	CY				0
331 12 09 01	Solids Preparation and Handling	CY				0
331 12 09 02	Liquids Preparation and Handling	GAL				0
331 12 09 03	Vapor / Gas Preparation and Handling	CF				0
331 12 09 04	Pads / Foundations / Spill Control	SF				0
331 12 09 05	Mobilization / Setup of Portable Treatment Plant	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 12 09 06 Startup	EA					0
331 12 09 07 Demobilization of Portable Treatment Plant	EA					0
331 12 09 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 12 09 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 12 09 10 Testing	EA					0
331 12 09 11 Permits	EA					0
331 12 09 12 Training	EA					0
331 12 09 13 Final Closure	EA					0
331 12 10 00 Alkali Metal Dechlorination	CY					0
331 12 10 01 Solids Preparation and Handling	CY					0
331 12 10 02 Liquids Preparation and Handling	GAL					0
331 12 10 03 Vapor / Gas Preparation and Handling	CF					0
331 12 10 04 Pads / Foundations / Spill Control	SF					0
331 12 10 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 12 10 06 Startup	EA					0
331 12 10 07 Demobilization of Portable Treatment Plant	EA					0
331 12 10 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 12 10 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 12 10 10 Testing	EA					0
331 12 10 11 Permits	EA					0
331 12 10 12 Training	EA					0
331 12 10 13 Final Closure	EA					0
331 12 11 00 Alkali Metal / Polyethylene Glycol (A / PEG)	CY					0
331 12 11 01 Solids Preparation and Handling	CY					0
331 12 11 02 Liquids Preparation and Handling	GAL					0
331 12 11 03 Vapor / Gas Preparation and Handling	CF					0
331 12 11 04 Pads / Foundations / Spill Control	SF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 12 11 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 12 11 06	Startup	EA				0
331 12 11 07	Demobilization of Portable Treatment Plant	EA				0
331 12 11 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 12 11 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 12 11 10	Testing	EA				0
331 12 11 11	Permits	EA				0
331 12 11 12	Training	EA				0
331 12 11 13	Final Closure	EA				0
331 12 12 00	Base - Catalyzed Decomposition Process	CY				0
331 12 12 01	Solids Preparation and Handling	CY				0
331 12 12 02	Liquids Preparation and Handling	GAL				0
331 12 12 03	Vapor / Gas Preparation and Handling	CF				0
331 12 12 04	Pads / Foundations / Spill Control	SF				0
331 12 12 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 12 12 06	Startup	EA				0
331 12 12 07	Demobilization of Portable Treatment Plant	EA				0
331 12 12 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 12 12 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 12 12 10	Testing	EA				0
331 12 12 11	Permits	EA				0
331 12 12 12	Training	EA				0
331 12 12 13	Final Closure	EA				0
331 12 13 00	Electrolysis	MGA				0
331 12 13 01	Solids Preparation and Handling	CY				0
331 12 13 02	Liquids Preparation and Handling	GAL				0
331 12 13 03	Vapor / Gas Preparation and Handling	CF				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 12 13 04 Pads / Foundations / Spill Control	SF					0
331 12 13 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 12 13 06 Startup	EA					0
331 12 13 07 Demobilization of Portable Treatment Plant	EA					0
331 12 13 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 12 13 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 12 13 10 Testing	EA					0
331 12 13 11 Permits	EA					0
331 12 13 12 Training	EA					0
331 12 13 13 Final Closure	EA					0
331 12 14 00 Vapor Recovery / Reuse (Internal Combustion Engine)	CF					0
331 12 14 01 Solids Preparation and Handling	CY					0
331 12 14 02 Liquids Preparation and Handling	GAL					0
331 12 14 03 Vapor / Gas Preparation and Handling	CF					0
331 12 14 04 Pads / Foundations / Spill Control	SF					0
331 12 14 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 12 14 06 Startup	EA					0
331 12 14 07 Demobilization of Portable Treatment Plant	EA					0
331 12 14 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 12 14 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 12 14 10 Testing	EA					0
331 12 14 11 Permits	EA					0
331 12 14 12 Training	EA					0
331 12 14 13 Final Closure	EA					0
331 12 50 00 Construction of Permanent Plant Facility	EA					0
331 12 50 01 Substructure	SF					0
331 12 50 02 Superstructure	SF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 12 50 03	Exterior Closure	SF				0
331 12 50 04	Roofing	SF				0
331 12 50 05	Interior Construction	SF				0
331 12 50 06	Interior Finishes	SF				0
331 12 50 07	Conveying Systems	SF				0
331 12 50 08	Plumbing	SF				0
331 12 50 09	HVAC	SF				0
331 12 50 10	Fire Protection System	SF				0
331 12 50 11	Electric Power and Lighting	SF				0
331 12 50 12	Electrical Systems	SF				0
331 12 50 13	Equipment	SF				0
331 12 50 14	Furnishings	SF				0
331 12 50 15	Special Construction	SF				0
331 13 00 00	PHYSICAL TREATMENT					0
331 13 01 00	Filtration / Ultrafiltration	MGA	\$0.69	\$1.25	\$6.08	5
331 13 01 01	Solids Preparation and Handling	CY				0
331 13 01 02	Liquids Preparation and Handling	GAL				0
331 13 01 03	Vapor / Gas Preparation and Handling	CF				0
331 13 01 04	Pads / Foundations / Spill Control	SF				0
331 13 01 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 01 06	Startup	EA				0
331 13 01 07	Demobilization of Portable Treatment Plant	EA				0
331 13 01 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 01 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 01 10	Testing	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 01 11	Permits	EA				0
331 13 01 12	Training	EA				0
331 13 01 13	Final Closure	EA				0
331 13 02 00	Sedimentation	MGA				0
331 13 02 01	Solids Preparation and Handling	CY				0
331 13 02 02	Liquids Preparation and Handling	GAL				0
331 13 02 03	Vapor / Gas Preparation and Handling	CF				0
331 13 02 04	Pads / Foundations / Spill Control	SF				0
331 13 02 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 02 06	Startup	EA				0
331 13 02 07	Demobilization of Portable Treatment Plant	EA				0
331 13 02 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 02 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 02 10	Testing	EA				0
331 13 02 11	Permits	EA				0
331 13 02 12	Training	EA				0
331 13 02 13	Final Closure	EA				0
331 13 03 00	Straining	MGA	\$0.33		1	1
331 13 03 01	Solids Preparation and Handling	CY				0
331 13 03 02	Liquids Preparation and Handling	GAL				0
331 13 03 03	Vapor / Gas Preparation and Handling	CF				0
331 13 03 04	Pads / Foundations / Spill Control	SF				0
331 13 03 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 03 06	Startup	EA				0
331 13 03 07	Demobilization of Portable Treatment Plant	EA				0
331 13 03 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 03 09	O&M of Permanent Treatment Plant During Construction	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 03 10 Testing	EA					0
331 13 03 11 Permits	EA					0
331 13 03 12 Training	EA					0
331 13 03 13 Final Closure	EA					0
331 13 04 00 Coagulation / Flocculation / Precipitation	MGA	\$2.09	\$2.93	\$52.27	5	7
331 13 04 01 Solids Preparation and Handling	CY					0
331 13 04 02 Liquids Preparation and Handling	GAL					0
331 13 04 03 Vapor / Gas Preparation and Handling	CF					0
331 13 04 04 Pads / Foundations / Spill Control	SF					0
331 13 04 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 04 06 Startup	EA					0
331 13 04 07 Demobilization of Portable Treatment Plant	EA					0
331 13 04 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 04 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 04 10 Testing	EA					0
331 13 04 11 Permits	EA					0
331 13 04 12 Training	EA					0
331 13 04 13 Final Closure	EA					0
331 13 05 00 Equalization	MGA		\$1.04		2	2
331 13 05 01 Solids Preparation and Handling	CY					0
331 13 05 02 Liquids Preparation and Handling	GAL					0
331 13 05 03 Vapor / Gas Preparation and Handling	CF					0
331 13 05 04 Pads / Foundations / Spill Control	SF					0
331 13 05 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 05 06 Startup	EA					0
331 13 05 07 Demobilization of Portable Treatment Plant	EA					0
331 13 05 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 05 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 05 10 Testing	EA					0
331 13 05 11 Permits	EA					0
331 13 05 12 Training	EA					0
331 13 05 13 Final Closure	EA					0
331 13 06 00 Evaporation	MGA					0
331 13 06 01 Solids Preparation and Handling	CY					0
331 13 06 02 Liquids Preparation and Handling	GAL					0
331 13 06 03 Vapor / Gas Preparation and Handling	CF					0
331 13 06 04 Pads / Foundations / Spill Control	SF					0
331 13 06 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 06 06 Startup	EA					0
331 13 06 07 Demobilization of Portable Treatment Plant	EA					0
331 13 06 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 06 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 06 10 Testing	EA					0
331 13 06 11 Permits	EA					0
331 13 06 12 Training	EA					0
331 13 06 13 Final Closure	EA					0
331 13 07 00 Air Stripping	MGA	\$1.89	\$6.07	\$57.36	13	23
331 13 07 01 Solids Preparation and Handling	CY		\$9.50		1	1
331 13 07 02 Liquids Preparation and Handling	GAL					0
331 13 07 03 Vapor / Gas Preparation and Handling	CF					0
331 13 07 04 Pads / Foundations / Spill Control	SF					0
331 13 07 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 07 06 Startup	EA					0
331 13 07 07 Demobilization of Portable Treatment Plant	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 07 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 07 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 07 10	Testing	EA				0
331 13 07 11	Permits	EA				0
331 13 07 12	Training	EA				0
331 13 07 13	Final Closure	EA				0
331 13 08 00	Steam Stripping	MGA				0
331 13 08 01	Solids Preparation and Handling	CY				0
331 13 08 02	Liquids Preparation and Handling	GAL				0
331 13 08 03	Vapor / Gas Preparation and Handling	CF				0
331 13 08 04	Pads / Foundations / Spill Control	SF				0
331 13 08 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 08 06	Startup	EA				0
331 13 08 07	Demobilization of Portable Treatment Plant	EA				0
331 13 08 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 08 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 08 10	Testing	EA				0
331 13 08 11	Permits	EA				0
331 13 08 12	Training	EA				0
331 13 08 13	Final Closure	EA				0
331 13 09 00	Soil Washing (Surfactant / Solvent)	CY				0
331 13 09 01	Solids Preparation and Handling	CY				0
331 13 09 02	Liquids Preparation and Handling	GAL				0
331 13 09 03	Vapor / Gas Preparation and Handling	CF				0
331 13 09 04	Pads / Foundations / Spill Control	SF				0
331 13 09 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 09 06	Startup	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 13 09 07	Demobilization of Portable Treatment Plant	EA				0	
331 13 09 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0	
331 13 09 09	O&M of Permanent Treatment Plant During Construction	MO				0	
331 13 09 10	Testing	EA				0	
331 13 09 11	Permits	EA				0	
331 13 09 12	Training	EA				0	
331 13 09 13	Final Closure	EA				0	
331 13 10 00	Soil Flushing (Surfactant / Solvent)	CY	\$0.57		1	1	
331 13 10 01	Solids Preparation and Handling	CY				0	
331 13 10 02	Liquids Preparation and Handling	GAL				0	
331 13 10 03	Vapor / Gas Preparation and Handling	CF				0	
331 13 10 04	Pads / Foundations / Spill Control	SF				0	
331 13 10 05	Mobilization / Setup of Portable Treatment Plant	EA				0	
331 13 10 06	Startup	EA				0	
331 13 10 07	Demobilization of Portable Treatment Plant	EA				0	
331 13 10 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0	
331 13 10 09	O&M of Permanent Treatment Plant During Construction	MO				0	
331 13 10 10	Testing	EA				0	
331 13 10 11	Permits	EA				0	
331 13 10 12	Training	EA				0	
331 13 10 13	Final Closure	EA				0	
331 13 11 00	Solids Dewatering	CY	\$2.29	\$56.01	\$319.82	3	6
331 13 11 01	Solids Preparation and Handling	CY				0	
331 13 11 02	Liquids Preparation and Handling	GAL				0	
331 13 11 03	Vapor / Gas Preparation and Handling	CF				0	
331 13 11 04	Pads / Foundations / Spill Control	SF				0	
331 13 11 05	Mobilization / Setup of Portable Treatment Plant	EA				0	

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 11 06 Startup	EA					0
331 13 11 07 Demobilization of Portable Treatment Plant	EA					0
331 13 11 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 11 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 11 10 Testing	EA					0
331 13 11 11 Permits	EA					0
331 13 11 12 Training	EA					0
331 13 11 13 Final Closure	EA					0
331 13 12 00 Oil / Water Separation	MGA	\$19.42	\$91.26	\$508.32	5	6
331 13 12 01 Solids Preparation and Handling	CY					0
331 13 12 02 Liquids Preparation and Handling	GAL					0
331 13 12 03 Vapor / Gas Preparation and Handling	CF					0
331 13 12 04 Pads / Foundations / Spill Control	SF					0
331 13 12 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 12 06 Startup	EA					0
331 13 12 07 Demobilization of Portable Treatment Plant	EA					0
331 13 12 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 12 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 12 10 Testing	EA					0
331 13 12 11 Permits	EA					0
331 13 12 12 Training	EA					0
331 13 12 13 Final Closure	EA					0
331 13 13 00 Dissolved Air Floatation	MGA					0
331 13 13 01 Solids Preparation and Handling	CY					0
331 13 13 02 Liquids Preparation and Handling	GAL					0
331 13 13 03 Vapor / Gas Preparation and Handling	CF					0
331 13 13 04 Pads / Foundations / Spill Control	SF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 13 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 13 06 Startup	EA					0
331 13 13 07 Demobilization of Portable Treatment Plant	EA					0
331 13 13 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 13 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 13 10 Testing	EA					0
331 13 13 11 Permits	EA					0
331 13 13 12 Training	EA					0
331 13 13 13 Final Closure	EA					0
331 13 14 00 Heavy Media Separation	CY					0
331 13 14 01 Solids Preparation and Handling	CY					0
331 13 14 02 Liquids Preparation and Handling	GAL					0
331 13 14 03 Vapor / Gas Preparation and Handling	CF					0
331 13 14 04 Pads / Foundations / Spill Control	SF					0
331 13 14 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 14 06 Startup	EA					0
331 13 14 07 Demobilization of Portable Treatment Plant	EA					0
331 13 14 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 14 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 14 10 Testing	EA					0
331 13 14 11 Permits	EA					0
331 13 14 12 Training	EA					0
331 13 14 13 Final Closure	EA					0
331 13 15 00 Distillation	MGA					0
331 13 15 01 Solids Preparation and Handling	CY					0
331 13 15 02 Liquids Preparation and Handling	GAL					0
331 13 15 03 Vapor / Gas Preparation and Handling	CF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 15 04 Pads / Foundations / Spill Control	SF					0
331 13 15 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 15 06 Startup	EA					0
331 13 15 07 Demobilization of Portable Treatment Plant	EA					0
331 13 15 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 15 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 15 10 Testing	EA					0
331 13 15 11 Permits	EA					0
331 13 15 12 Training	EA					0
331 13 15 13 Final Closure	EA					0
331 13 16 00 Chelation	MGA					0
331 13 16 01 Solids Preparation and Handling	CY					0
331 13 16 02 Liquids Preparation and Handling	GAL					0
331 13 16 03 Vapor / Gas Preparation and Handling	CF					0
331 13 16 04 Pads / Foundations / Spill Control	SF					0
331 13 16 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 16 06 Startup	EA					0
331 13 16 07 Demobilization of Portable Treatment Plant	EA					0
331 13 16 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 16 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 16 10 Testing	EA					0
331 13 16 11 Permits	EA					0
331 13 16 12 Training	EA					0
331 13 16 13 Final Closure	EA					0
331 13 17 00 Solvent Extraction	MGA					0
331 13 17 01 Solids Preparation and Handling	CY					0
331 13 17 02 Liquids Preparation and Handling	GAL					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 17 03	Vapor / Gas Preparation and Handling	CF				0
331 13 17 04	Pads / Foundations / Spill Control	SF				0
331 13 17 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 17 06	Startup	EA				0
331 13 17 07	Demobilization of Portable Treatment Plant	EA				0
331 13 17 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 17 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 17 10	Testing	EA				0
331 13 17 11	Permits	EA				0
331 13 17 12	Training	EA				0
331 13 17 13	Final Closure	EA				0
331 13 18 00	Supercritical Extraction	MGA				0
331 13 18 01	Solids Preparation and Handling	CY				0
331 13 18 02	Liquids Preparation and Handling	GAL				0
331 13 18 03	Vapor / Gas Preparation and Handling	CF				0
331 13 18 04	Pads / Foundations / Spill Control	SF				0
331 13 18 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 18 06	Startup	EA				0
331 13 18 07	Demobilization of Portable Treatment Plant	EA				0
331 13 18 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 18 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 18 10	Testing	EA				0
331 13 18 11	Permits	EA				0
331 13 18 12	Training	EA				0
331 13 18 13	Final Closure	EA				0
331 13 19 00	Carbon Adsorption - Gases	CF	\$5.14		2	3
331 13 19 01	Solids Preparation and Handling	CY				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 13 19 02	Liquids Preparation and Handling	GAL				0	
331 13 19 03	Vapor / Gas Preparation and Handling	CF				0	
331 13 19 04	Pads / Foundations / Spill Control	SF				0	
331 13 19 05	Mobilization / Setup of Portable Treatment Plant	EA				0	
331 13 19 06	Startup	EA				0	
331 13 19 07	Demobilization of Portable Treatment Plant	EA				0	
331 13 19 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0	
331 13 19 09	O&M of Permanent Treatment Plant During Construction	MO				0	
331 13 19 10	Testing	EA				0	
331 13 19 11	Permits	EA				0	
331 13 19 12	Training	EA				0	
331 13 19 13	Final Closure	EA				0	
331 13 20 00	Carbon Adsorption - Liquids	MGA	\$0.59	\$1.78	\$2.55	7	12
331 13 20 01	Solids Preparation and Handling	CY					0
331 13 20 02	Liquids Preparation and Handling	GAL					0
331 13 20 03	Vapor / Gas Preparation and Handling	CF					0
331 13 20 04	Pads / Foundations / Spill Control	SF					0
331 13 20 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 20 06	Startup	EA					0
331 13 20 07	Demobilization of Portable Treatment Plant	EA					0
331 13 20 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 20 09	O&M of Permanent Treatment Plant During Construction	MO					0
331 13 20 10	Testing	EA					0
331 13 20 11	Permits	EA					0
331 13 20 12	Training	EA					0
331 13 20 13	Final Closure	EA					0
331 13 21 00	Membrane Separation - Reverse Osmosis	MGA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 21 01	Solids Preparation and Handling	CY				0
331 13 21 02	Liquids Preparation and Handling	GAL				0
331 13 21 03	Vapor / Gas Preparation and Handling	CF				0
331 13 21 04	Pads / Foundations / Spill Control	SF				0
331 13 21 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 21 06	Startup	EA				0
331 13 21 07	Demobilization of Portable Treatment Plant	EA				0
331 13 21 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 21 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 21 10	Testing	EA				0
331 13 21 11	Permits	EA				0
331 13 21 12	Training	EA				0
331 13 21 13	Final Closure	EA				0
331 13 22 00	Membrane Separation - Electrodialysis	MGA				0
331 13 22 01	Solids Preparation and Handling	CY				0
331 13 22 02	Liquids Preparation and Handling	GAL				0
331 13 22 03	Vapor / Gas Preparation and Handling	CF				0
331 13 22 04	Pads / Foundations / Spill Control	SF				0
331 13 22 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 13 22 06	Startup	EA				0
331 13 22 07	Demobilization of Portable Treatment Plant	EA				0
331 13 22 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 13 22 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 13 22 10	Testing	EA				0
331 13 22 11	Permits	EA				0
331 13 22 12	Training	EA				0
331 13 22 13	Final Closure	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 13 23 00	Soil Vapor Extraction	CY	\$33.32	\$33.32	\$33.32	1	6
331 13 23 01	Solids Preparation and Handling	CY					0
331 13 23 02	Liquids Preparation and Handling	GAL					0
331 13 23 03	Vapor / Gas Preparation and Handling	CF					0
331 13 23 04	Pads / Foundations / Spill Control	SF					0
331 13 23 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 23 06	Startup	EA					0
331 13 23 07	Demobilization of Portable Treatment Plant	EA					0
331 13 23 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 23 09	O&M of Permanent Treatment Plant During Construction	MO					0
331 13 23 10	Testing	EA					0
331 13 23 11	Permits	EA					0
331 13 23 12	Training	EA					0
331 13 23 13	Final Closure	EA					0
331 13 24 00	Shredding	CY					0
331 13 24 01	Solids Preparation and Handling	CY					0
331 13 24 02	Liquids Preparation and Handling	GAL					0
331 13 24 03	Vapor / Gas Preparation and Handling	CF					0
331 13 24 04	Pads / Foundations / Spill Control	SF					0
331 13 24 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 24 06	Startup	EA					0
331 13 24 07	Demobilization of Portable Treatment Plant	EA					0
331 13 24 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 24 09	O&M of Permanent Treatment Plant During Construction	MO					0
331 13 24 10	Testing	EA					0
331 13 24 11	Permits	EA					0
331 13 24 12	Training	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 24 13 Final Closure	EA					0
331 13 25 00 Aeration	CY					0
331 13 25 01 Solids Preparation and Handling	CY					0
331 13 25 02 Liquids Preparation and Handling	GAL					0
331 13 25 03 Vapor / Gas Preparation and Handling	CF					0
331 13 25 04 Pads / Foundations / Spill Control	SF					0
331 13 25 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 25 06 Startup	EA					0
331 13 25 07 Demobilization of Portable Treatment Plant	EA					0
331 13 25 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 25 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 25 10 Testing	EA					0
331 13 25 11 Permits	EA					0
331 13 25 12 Training	EA					0
331 13 25 13 Final Closure	EA					0
331 13 26 00 Advanced Electrical Reactor	CY					0
331 13 26 01 Solids Preparation and Handling	CY					0
331 13 26 02 Liquids Preparation and Handling	GAL					0
331 13 26 03 Vapor / Gas Preparation and Handling	CF					0
331 13 26 04 Pads / Foundations / Spill Control	SF					0
331 13 26 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 26 06 Startup	EA					0
331 13 26 07 Demobilization of Portable Treatment Plant	EA					0
331 13 26 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 26 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 26 10 Testing	EA					0
331 13 26 11 Permits	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 26 12 Training	EA					0
331 13 26 13 Final Closure	EA					0
331 13 27 00 Low Level Waste (LLW) Compaction	CY					0
331 13 27 01 Solids Preparation and Handling	CY					0
331 13 27 02 Liquids Preparation and Handling	GAL					0
331 13 27 03 Vapor / Gas Preparation and Handling	CF					0
331 13 27 04 Pads / Foundations / Spill Control	SF					0
331 13 27 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 27 06 Startup	EA					0
331 13 27 07 Demobilization of Portable Treatment Plant	EA					0
331 13 27 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 27 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 27 10 Testing	EA					0
331 13 27 11 Permits	EA					0
331 13 27 12 Training	EA					0
331 13 27 13 Final Closure	EA					0
331 13 28 00 Agglomeration	CY					0
331 13 28 01 Solids Preparation and Handling	CY					0
331 13 28 02 Liquids Preparation and Handling	GAL					0
331 13 28 03 Vapor / Gas Preparation and Handling	CF					0
331 13 28 04 Pads / Foundations / Spill Control	SF					0
331 13 28 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 28 06 Startup	EA					0
331 13 28 07 Demobilization of Portable Treatment Plant	EA					0
331 13 28 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 28 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 28 10 Testing	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 13 28 11	Permits	EA				0	
331 13 28 12	Training	EA				0	
331 13 28 13	Final Closure	EA				0	
331 13 29 00	In - Situ Steam Extraction	MGA				0	
331 13 29 01	Solids Preparation and Handling	CY				0	
331 13 29 02	Liquids Preparation and Handling	GAL				0	
331 13 29 03	Vapor / Gas Preparation and Handling	CF				0	
331 13 29 04	Pads / Foundations / Spill Control	SF				0	
331 13 29 05	Mobilization / Setup of Portable Treatment Plant	EA				0	
331 13 29 06	Startup	EA				0	
331 13 29 07	Demobilization of Portable Treatment Plant	EA				0	
331 13 29 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0	
331 13 29 09	O&M of Permanent Treatment Plant During Construction	MO				0	
331 13 29 10	Testing	EA				0	
331 13 29 11	Permits	EA				0	
331 13 29 12	Training	EA				0	
331 13 29 13	Final Closure	EA				0	
331 13 30 00	Filter Presses	MGA	\$2.86	\$7.79	\$141.20	6	7
331 13 30 01	Solids Preparation and Handling	CY					0
331 13 30 02	Liquids Preparation and Handling	GAL					0
331 13 30 03	Vapor / Gas Preparation and Handling	CF					0
331 13 30 04	Pads / Foundations / Spill Control	SF					0
331 13 30 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 30 06	Startup	EA					0
331 13 30 07	Demobilization of Portable Treatment Plant	EA					0
331 13 30 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 30 09	O&M of Permanent Treatment Plant During Construction	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 30 10 Testing	EA					0
331 13 30 11 Permits	EA					0
331 13 30 12 Training	EA					0
331 13 30 13 Final Closure	EA					0
331 13 31 00 Lignin Adsorption / Sorptive Clays	CY					0
331 13 31 01 Solids Preparation and Handling	CY					0
331 13 31 02 Liquids Preparation and Handling	GAL					0
331 13 31 03 Vapor / Gas Preparation and Handling	CF					0
331 13 31 04 Pads / Foundations / Spill Control	SF					0
331 13 31 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 31 06 Startup	EA					0
331 13 31 07 Demobilization of Portable Treatment Plant	EA					0
331 13 31 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 13 31 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 31 10 Testing	EA					0
331 13 31 11 Permits	EA					0
331 13 31 12 Training	EA					0
331 13 31 13 Final Closure	EA					0
331 13 32 00 Air Sparging	GAL					0
331 13 32 01 Solids Preparation and Handling	CY					0
331 13 32 02 Liquids Preparation and Handling	GAL					0
331 13 32 03 Vapor / Gas Preparation and Handling	CF					0
331 13 32 04 Pads / Foundations / Spill Control	SF					0
331 13 32 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 13 32 06 Startup	EA					0
331 13 32 07 Demobilization of Portable Treatment Plant	EA					0
331 13 32 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 13 32 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 13 32 10 Testing	EA					0
331 13 32 11 Permits	EA					0
331 13 32 12 Training	EA					0
331 13 32 13 Final Closure	EA					0
331 13 50 00 Construction of Permanent Plant Facility	EA		\$2,363,570.00		1	1
331 13 50 01 Substructure	SF					0
331 13 50 02 Superstructure	SF					0
331 13 50 03 Exterior Closure	SF					0
331 13 50 04 Roofing	SF					0
331 13 50 05 Interior Construction	SF					0
331 13 50 06 Interior Finishes	SF					0
331 13 50 07 Conveying Systems	SF					0
331 13 50 08 Plumbing	SF					0
331 13 50 09 HVAC	SF					0
331 13 50 10 Fire Protection System	SF					0
331 13 50 11 Electric Power and Lighting	SF					0
331 13 50 12 Electrical Systems	SF					0
331 13 50 13 Equipment	SF					0
331 13 50 14 Furnishings	SF					0
331 13 50 15 Special Construction	SF					0
331 14 00 00 THERMAL TREATMENT						0
331 14 01 00 Incineration	CY	\$39.58	\$72.52	\$83.11	5	6
331 14 01 01 Solids Preparation and Handling	CY					0
331 14 01 02 Liquids Preparation and Handling	GAL		\$0.24		2	2

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 14 01 03	Vapor / Gas Preparation and Handling	CF				0	
331 14 01 04	Pads / Foundations / Spill Control	SF				0	
331 14 01 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0	
331 14 01 10	Testing	EA				0	
331 14 01 11	Permits	EA				0	
331 14 01 12	Training	EA				0	
331 14 01 13	Final Closure	EA				0	
331 14 02 00	Low Temperature Thermal Desorption	CY	\$37.70	\$144.87	\$263.26	3	4
331 14 02 01	Solids Preparation and Handling	CY					0
331 14 02 02	Liquids Preparation and Handling	GAL					0
331 14 02 03	Vapor / Gas Preparation and Handling	CF					0
331 14 02 04	Pads / Foundations / Spill Control	SF					0
331 14 02 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 14 02 06	Startup	EA					0
331 14 02 07	Demobilization of Portable Treatment Plant	EA					0
331 14 02 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 14 02 09	O&M of Permanent Treatment Plant During Construction	MO					0
331 14 02 10	Testing	EA					0
331 14 02 11	Permits	EA					0
331 14 02 12	Training	EA					0
331 14 02 13	Final Closure	EA					0
331 14 03 00	Supercritical Water Oxidation	MGA					0
331 14 03 01	Solids Preparation and Handling	CY					0
331 14 03 02	Liquids Preparation and Handling	GAL					0
331 14 03 03	Vapor / Gas Preparation and Handling	CF					0
331 14 03 04	Pads / Foundations / Spill Control	SF					0
331 14 03 05	Mobilization / Setup of Portable Treatment Plant	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 14 03 06 Startup	EA					0
331 14 03 07 Demobilization of Portable Treatment Plant	EA					0
331 14 03 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 14 03 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 14 03 10 Testing	EA					0
331 14 03 11 Permits	EA					0
331 14 03 12 Training	EA					0
331 14 03 13 Final Closure	EA					0
331 14 04 00 Molten Salt Destruction	CY					0
331 14 04 01 Solids Preparation and Handling	CY					0
331 14 04 02 Liquids Preparation and Handling	GAL					0
331 14 04 03 Vapor / Gas Preparation and Handling	CF					0
331 14 04 04 Pads / Foundations / Spill Control	SF					0
331 14 04 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 14 04 06 Startup	EA					0
331 14 04 07 Demobilization of Portable Treatment Plant	EA					0
331 14 04 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 14 04 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 14 04 10 Testing	EA					0
331 14 04 11 Permits	EA					0
331 14 04 12 Training	EA					0
331 14 04 13 Final Closure	EA					0
331 14 05 00 Radio Frequency Heating	CY					0
331 14 05 01 Solids Preparation and Handling	CY					0
331 14 05 02 Liquids Preparation and Handling	GAL					0
331 14 05 03 Vapor / Gas Preparation and Handling	CF					0
331 14 05 04 Pads / Foundations / Spill Control	SF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 14 05 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 14 05 06 Startup	EA					0
331 14 05 07 Demobilization of Portable Treatment Plant	EA					0
331 14 05 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 14 05 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 14 05 10 Testing	EA					0
331 14 05 11 Permits	EA					0
331 14 05 12 Training	EA					0
331 14 05 13 Final Closure	EA					0
331 14 06 00 Solar Detoxification	CY					0
331 14 06 01 Solids Preparation and Handling	CY					0
331 14 06 02 Liquids Preparation and Handling	GAL					0
331 14 06 03 Vapor / Gas Preparation and Handling	CF					0
331 14 06 04 Pads / Foundations / Spill Control	SF					0
331 14 06 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 14 06 06 Startup	EA					0
331 14 06 07 Demobilization of Portable Treatment Plant	EA					0
331 14 06 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 14 06 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 14 06 10 Testing	EA					0
331 14 06 11 Permits	EA					0
331 14 06 12 Training	EA					0
331 14 06 13 Final Closure	EA					0
331 14 07 00 High Temperature Thermal Desorption	CY					0
331 14 07 01 Solids Preparation and Handling	CY					0
331 14 07 02 Liquids Preparation and Handling	GAL					0
331 14 07 03 Vapor / Gas Preparation and Handling	CF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 14 07 04 Pads / Foundations / Spill Control	SF					0
331 14 07 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 14 07 06 Startup	EA					0
331 14 07 07 Demobilization of Portable Treatment Plant	EA					0
331 14 07 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 14 07 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 14 07 10 Testing	EA					0
331 14 07 11 Permits	EA					0
331 14 07 12 Training	EA					0
331 14 07 13 Final Closure	EA					0
331 14 50 01 Substructure	SF					0
331 14 50 02 Superstructure	SF					0
331 14 50 03 Exterior Closure	SF					0
331 14 50 04 Roofing	SF					0
331 14 50 05 Interior Construction	SF					0
331 14 50 06 Interior Finishes	SF					0
331 14 50 07 Conveying Systems	SF					0
331 14 50 08 Plumbing	SF					0
331 14 50 09 HVAC	SF					0
331 14 50 10 Fire Protection System	SF					0
331 14 50 11 Electric Power and Lighting	SF					0
331 14 50 12 Electrical Systems	SF					0
331 14 50 13 Equipment	SF					0
331 14 50 14 Furnishings	SF					0
331 14 50 15 Special Construction	SF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 15 00 00	STABILIZATION / FIXATION / ENCAPSULATION					0
331 15 01 00	Molten Glass					0
331 15 01 01	Solids Preparation and Handling					0
331 15 01 02	Liquids Preparation and Handling					0
331 15 01 03	Vapor / Gas Preparation and Handling					0
331 15 01 04	Pads / Foundations / Spill Control					0
331 15 01 05	Mobilization / Setup of Portable Treatment Plant					0
331 15 01 06	Startup					0
331 15 01 07	Demobilization of Portable Treatment Plant					0
331 15 01 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr					0
331 15 01 09	O&M of Permanent Treatment Plant During Construction					0
331 15 01 10	Testing					0
331 15 01 11	Permits					0
331 15 01 12	Training					0
331 15 01 13	Final Closure					0
331 15 02 00	In - Situ Vitrification					0
331 15 02 01	Solids Preparation and Handling					0
331 15 02 02	Liquids Preparation and Handling					0
331 15 02 03	Vapor / Gas Preparation and Handling					0
331 15 02 04	Pads / Foundations / Spill Control					0
331 15 02 05	Mobilization / Setup of Portable Treatment Plant					0
331 15 02 06	Startup					0
331 15 02 07	Demobilization of Portable Treatment Plant					0
331 15 02 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr					0
331 15 02 09	O&M of Permanent Treatment Plant During Construction					0
331 15 02 10	Testing					0
331 15 02 11	Permits					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 15 02 12 Training	EA					0
331 15 02 13 Final Closure	EA					0
331 15 03 00 In - Situ Pozzolan Process (Lime / Portland Cement)	CY		\$327.74		1	1
331 15 03 01 Solids Preparation and Handling	CY					0
331 15 03 02 Liquids Preparation and Handling	GAL					0
331 15 03 03 Vapor / Gas Preparation and Handling	CF					0
331 15 03 04 Pads / Foundations / Spill Control	SF					0
331 15 03 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 15 03 06 Startup	EA					0
331 15 03 07 Demobilization of Portable Treatment Plant	EA					0
331 15 03 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 15 03 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 15 03 10 Testing	EA					0
331 15 03 11 Permits	EA					0
331 15 03 12 Training	EA					0
331 15 03 13 Final Closure	EA					0
331 15 04 00 Pozzolan Process (Lime / Portland Cement)	CY	\$8.94	\$32.86	\$63.77	3	12
331 15 04 01 Solids Preparation and Handling	CY					0
331 15 04 02 Liquids Preparation and Handling	GAL					0
331 15 04 03 Vapor / Gas Preparation and Handling	CF					0
331 15 04 04 Pads / Foundations / Spill Control	SF					0
331 15 04 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 15 04 06 Startup	EA					0
331 15 04 07 Demobilization of Portable Treatment Plant	EA					0
331 15 04 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 15 04 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 15 04 10 Testing	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 15 04 11	Permits	EA				0
331 15 04 12	Training	EA				0
331 15 04 13	Final Closure	EA				0
331 15 05 00	Asphalt - Based Encapsulation	CY				0
331 15 05 01	Solids Preparation and Handling	CY				0
331 15 05 02	Liquids Preparation and Handling	GAL				0
331 15 05 03	Vapor / Gas Preparation and Handling	CF				0
331 15 05 04	Pads / Foundations / Spill Control	SF				0
331 15 05 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 15 05 06	Startup	EA				0
331 15 05 07	Demobilization of Portable Treatment Plant	EA				0
331 15 05 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 15 05 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 15 05 10	Testing	EA				0
331 15 05 11	Permits	EA				0
331 15 05 12	Training	EA				0
331 15 05 13	Final Closure	EA				0
331 15 06 00	Radioactive Waste Solidification (Grouting / Other)	CY				0
331 15 06 01	Solids Preparation and Handling	CY				0
331 15 06 02	Liquids Preparation and Handling	GAL				0
331 15 06 03	Vapor / Gas Preparation and Handling	CF				0
331 15 06 04	Pads / Foundations / Spill Control	SF				0
331 15 06 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 15 06 06	Startup	EA				0
331 15 06 07	Demobilization of Portable Treatment Plant	EA				0
331 15 06 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 15 06 09	O&M of Permanent Treatment Plant During Construction	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 15 06 10	Testing	EA				0
331 15 06 11	Permits	EA				0
331 15 06 12	Training	EA				0
331 15 06 13	Final Closure	EA				0
331 15 07 00	Sludge Stabilization (Aggregate / Rock / Slag)	CY	\$44.98		1	2
331 15 07 01	Solids Preparation and Handling	CY				0
331 15 07 02	Liquids Preparation and Handling	GAL				0
331 15 07 03	Vapor / Gas Preparation and Handling	CF				0
331 15 07 04	Pads / Foundations / Spill Control	SF				0
331 15 07 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 15 07 06	Startup	EA				0
331 15 07 07	Demobilization of Portable Treatment Plant	EA				0
331 15 07 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 15 07 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 15 07 10	Testing	EA				0
331 15 07 11	Permits	EA				0
331 15 07 12	Training	EA				0
331 15 07 13	Final Closure	EA				0
331 15 50 00	Construction of Permanent Plant	EA				0
331 15 50 01	Substructure	SF				0
331 15 50 02	Superstructure	SF				0
331 15 50 03	Exterior Closure	SF				0
331 15 50 04	Roofing	SF				0
331 15 50 05	Interior Construction	SF				0
331 15 50 06	Interior Finishes	SF				0
331 15 50 07	Conveying Systems	SF				0
331 15 50 08	Plumbing	SF				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 15 50 09 HVAC	SF					0
331 15 50 10 Fire Protection System	SF					0
331 15 50 11 Electric Power and Lighting	SF					0
331 15 50 12 Electrical Systems	SF					0
331 15 50 13 Equipment	SF					0
331 15 50 14 Furnishings	SF					0
331 15 50 15 Special Construction	SF					0
331 16 00 00 RESERVED FOR FUTURE USE						0
331 17 00 00 DECONTAMINATION AND DECOMMISSIONING (D&D)						0
331 17 01 00 Pre - Decommissioning Operations	SF					0
331 17 01 01 Preparation of Decommissioning Plan	EA					0
331 17 01 02 Licensing	EA					0
331 17 01 03 Radioactivity Surveys	EA					0
331 17 02 00 Facility Shutdown Activities	SF					0
331 17 02 01 Plant Shutdown and Inspection	EA					0
331 17 02 02 Defueling and Transfer of Fuel to Temporary Spent Fuel Storage	EA					0
331 17 02 03 Drainage and Drying or Blowdown of all Systems not in Operation	EA					0
331 17 02 04 Samples for Radioactivity Inventory Characterization	EA					0
331 17 02 05 Disposal of System Fluids (water, oils,...)	GAL					0
331 17 02 06 Disposal of Special System Fluids (D20, sodium,...)	GAL					0
331 17 02 07 Decontamination of Systems for Dose Reduction	EA					0
331 17 02 08 Disposal of Wastes from Decontamination	CF					0
331 17 02 09 Disposal of Combustible Material	CF					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 17 02 10	Disposal of Spent Resins	CF				0
331 17 02 11	Disposal of Other Wastes from Reactor Operations	CF				0
331 17 02 12	Isolation of Power Equipment	SF				0
331 17 02 13	Decon of Areas and Equip in all Bldgs to Reduce Controlled Area	SF				0
331 17 02 14	Mothballing	SF				0
331 17 02 15	Entombment	SF				0
331 17 03 00	Procurement of Equipment and Material	SF				0
331 17 03 01	Site Dismantling Equipment	EA				0
331 17 03 02	Radiation Protection and Health Physics Equipment	EA				0
331 17 03 03	Security and Maintenance Equipment for Long - Term Storage	EA				0
331 17 04 00	Dismantling Activities	SF				0
331 17 04 01	Decon of Areas and Equip in all Bldgs to Facilitate Dismantling	SF				0
331 17 04 02	Drainage of Spent Fuel Pool and Decontamination of Linings	SF				0
331 17 04 03	Zoning for Long - Term Storage	SF				0
331 17 04 04	Radioactive Inventory Categorization	SF				0
331 17 04 05	Dismantling and Transfer of Contam Equip and Mat to Contain Stor	SF				0
331 17 04 06	Isolation and Sealing of Containment Structure	SF				0
331 17 04 07	Layout of Dormancy Period Control Area	SF				0
331 17 04 08	Removal of Fuel Handling Equipment	SF				0
331 17 04 09	Design and Procurement of Special Tools for Dismantling	EA				0
331 17 04 10	Dismantling Operations on Reactor Vessels and Internals	EA				0
331 17 04 11	Removal of Primary and Auxiliary Systems	SF				0
331 17 04 12	Removal of Biological Shield	SF				0
331 17 04 13	Removal of Other Mat and Equip from Containment Structure	SF				0
331 17 04 14	Removal and Disposal of Asbestos	SF				0
331 17 04 15	Removal of Pool Linings	SF				0
331 17 04 16	Removal of Contamination from Areas and Structures in all Bldgs	SF				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 17 04 17	Radioactive Waste Characterization	EA				0
331 17 04 18	Radioactive Waste Characterization for Recycling	EA				0
331 17 04 19	Radioactive Waste Characterization for Final Disposal	EA				0
331 17 04 20	Personnel Training	EA				0
331 17 05 00	Research and Development (R&D)	SF				0
331 17 05 01	Literature Review	EA				0
331 17 05 02	Data Collection	EA				0
331 17 05 03	Considerations on Actual and Future Dismantling	EA				0
331 17 05 04	Decontamination Strategies / Techniques	EA				0
331 17 05 05	Status Review	EA				0
331 17 05 06	Development of New Dismantling Equipment	EA				0
331 17 05 07	Development or Use of New Decontamination Techniques	EA				0
331 17 05 08	Dev of Adapted Measurement Devices and Calc Techniques	EA				0
331 17 05 09	Development of Adapted Waste Treatment and Disposal Tech	EA				0
331 17 05 10	Research and Development on Remotely Operated Systems	EA				0
331 17 05 11	Simulation of Complicated Work on Model	EA				0
331 17 05 12	Robotics and Manipulators (R&D)	EA				0
331 17 06 00	Spent Fuel Handling	SF				0
331 17 06 01	Transfer of Fuel from Temp Storage to Intermediate Storage	EA				0
331 17 06 02	Intermediate Fuel Storage	EA				0
331 17 06 03	Dismantling / Disposal of Temporary Fuel Storage Facility	SF				0
331 17 06 04	Transfer of Fuel from Intermediate Storage to Reprocessing	EA				0
331 17 06 05	Reprocessing Costs	EA				0
331 17 06 06	Transfer and Disposal of Wastes from Reprocessing	CF				0
331 17 06 07	Transfer and Conditioning of Spent Fuel	CF				0
331 17 06 08	Transfer and Disposal of Spent Fuel	CF				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 17 07 00	Hot Cell Cleanup	SF				0
331 17 07 01	Radioactivity Survey	EA				0
331 17 07 02	Decon of Areas and Equip in Cell to Facilitate Dismantling	SF				0
331 17 07 03	Decon of Areas and Equip in Cell to Reduce Contam Levels	SF				0
331 17 07 04	Decontamination of Equipment for Transfer or Disposal	SF				0
331 17 07 05	Cell Equipment Modification	EA				0
331 17 07 06	Dismantling of Primary and Auxiliary Services to Cell	SF				0
331 17 07 07	Dismantling of In - Cell Equipment	EA				0
331 17 07 08	Transfer of Material and Equipment to Airlock Services	EA				0
331 17 07 09	Packaging and Preparation of Cell Waste in Airlock	CF				0
331 17 07 10	Transfer of Material from Airlock to Shipping Dock	CF				0
331 17 07 11	Cell Window Maintenance and Cleaning	EA				0
331 17 07 12	Cell Window Replacement / Refurbishment	EA				0
331 18 00 00	DISPOSAL (OTHER THAN COMMERCIAL)					0
331 18 01 00	Landfill / Burial Ground / Trench / Pits	CY	\$89.31		3	3
331 18 01 01	Solids Preparation and Handling	CY				0
331 18 01 02	Liquids Preparation and Handling	GAL				0
331 18 01 03	Vapor / Gas Preparation and Handling	CF				0
331 18 01 04	Pads / Foundations / Spill Control	SF				0
331 18 01 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 18 01 06	Startup	EA				0
331 18 01 07	Demobilization of Portable Treatment Plant	EA				0
331 18 01 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 18 01 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 18 01 10	Testing	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements	
		25th percentile	Median	75th percentile			
331 18 01 11	Permits	EA				0	
331 18 01 12	Training	EA				0	
331 18 01 13	Final Closure	EA				0	
331 18 02 00	Above - Ground Vault	CY				0	
331 18 02 01	Solids Preparation and Handling	CY				0	
331 18 02 02	Liquids Preparation and Handling	GAL				0	
331 18 02 03	Vapor / Gas Preparation and Handling	CF				0	
331 18 02 04	Pads / Foundations / Spill Control	SF				0	
331 18 02 05	Mobilization / Setup of Portable Treatment Plant	EA				0	
331 18 02 06	Startup	EA				0	
331 18 02 07	Demobilization of Portable Treatment Plant	EA				0	
331 18 02 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0	
331 18 02 09	O&M of Permanent Treatment Plant During Construction	MO				0	
331 18 02 10	Testing	EA				0	
331 18 02 11	Permits	EA				0	
331 18 02 12	Training	EA				0	
331 18 02 13	Final Closure	EA				0	
331 18 03 00	Underground Vault	CY	\$5.98	\$7.24	\$18.44	3	4
331 18 03 01	Solids Preparation and Handling	CY	\$25.44	\$25.44	\$25.44	1	5
331 18 03 02	Liquids Preparation and Handling	GAL		\$0.06		1	1
331 18 03 03	Vapor / Gas Preparation and Handling	CF					0
331 18 03 04	Pads / Foundations / Spill Control	SF					0
331 18 03 05	Mobilization / Setup of Portable Treatment Plant	EA					0
331 18 03 06	Startup	EA					0
331 18 03 07	Demobilization of Portable Treatment Plant	EA					0
331 18 03 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 18 03 09	O&M of Permanent Treatment Plant During Construction	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 18 03 10 Testing	EA					0
331 18 03 11 Permits	EA					0
331 18 03 12 Training	EA					0
331 18 03 13 Final Closure	EA					0
331 18 04 00 Underground Mine / Shaft	CY					0
331 18 04 01 Solids Preparation and Handling	CY					0
331 18 04 02 Liquids Preparation and Handling	GAL					0
331 18 04 03 Vapor / Gas Preparation and Handling	CF					0
331 18 04 04 Pads / Foundations / Spill Control	SF					0
331 18 04 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 18 04 06 Startup	EA					0
331 18 04 07 Demobilization of Portable Treatment Plant	EA					0
331 18 04 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 18 04 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 18 04 10 Testing	EA					0
331 18 04 11 Permits	EA					0
331 18 04 12 Training	EA					0
331 18 04 13 Final Closure	EA					0
331 18 05 00 Tanks	MGA					0
331 18 05 01 Solids Preparation and Handling	CY					0
331 18 05 02 Liquids Preparation and Handling	GAL					0
331 18 05 03 Vapor / Gas Preparation and Handling	CF					0
331 18 05 04 Pads / Foundations / Spill Control	SF					0
331 18 05 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 18 05 06 Startup	EA					0
331 18 05 07 Demobilization of Portable Treatment Plant	EA					0
331 18 05 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 18 05 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 18 05 10 Testing	EA					0
331 18 05 11 Permits	EA					0
331 18 05 12 Training	EA					0
331 18 05 13 Final Closure	EA					0
331 18 06 00 Pads (Tumulus / Retrievable Storage / Other)	CY		\$9.78		1	1
331 18 06 01 Solids Preparation and Handling	CY					0
331 18 06 02 Liquids Preparation and Handling	GAL					0
331 18 06 03 Vapor / Gas Preparation and Handling	CF					0
331 18 06 04 Pads / Foundations / Spill Control	SF					0
331 18 06 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 18 06 06 Startup	EA					0
331 18 06 07 Demobilization of Portable Treatment Plant	EA					0
331 18 06 08 Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO					0
331 18 06 09 O&M of Permanent Treatment Plant During Construction	MO					0
331 18 06 10 Testing	EA					0
331 18 06 11 Permits	EA					0
331 18 06 12 Training	EA					0
331 18 06 13 Final Closure	EA					0
331 18 07 00 Storage Bldgs / Protect Cover Struct / Other Bldgs and Struct	CY					0
331 18 07 01 Solids Preparation and Handling	CY					0
331 18 07 02 Liquids Preparation and Handling	GAL					0
331 18 07 03 Vapor / Gas Preparation and Handling	CF					0
331 18 07 04 Pads / Foundations / Spill Control	SF					0
331 18 07 05 Mobilization / Setup of Portable Treatment Plant	EA					0
331 18 07 06 Startup	EA					0
331 18 07 07 Demobilization of Portable Treatment Plant	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 18 07 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 18 07 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 18 07 10	Testing	EA				0
331 18 07 11	Permits	EA				0
331 18 07 12	Training	EA				0
331 18 07 13	Final Closure	EA				0
331 18 08 00	Cribs	CY				0
331 18 08 01	Solids Preparation and Handling	CY				0
331 18 08 02	Liquids Preparation and Handling	GAL				0
331 18 08 03	Vapor / Gas Preparation and Handling	CF				0
331 18 08 04	Pads / Foundations / Spill Control	SF				0
331 18 08 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 18 08 06	Startup	EA				0
331 18 08 07	Demobilization of Portable Treatment Plant	EA				0
331 18 08 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 18 08 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 18 08 10	Testing	EA				0
331 18 08 11	Permits	EA				0
331 18 08 12	Training	EA				0
331 18 08 13	Final Closure	EA				0
331 18 09 00	Deep Well Injection	MGA				0
331 18 09 01	Solids Preparation and Handling	CY				0
331 18 09 02	Liquids Preparation and Handling	GAL				0
331 18 09 03	Vapor / Gas Preparation and Handling	CF				0
331 18 09 04	Pads / Foundations / Spill Control	SF				0
331 18 09 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 18 09 06	Startup	EA				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 18 09 07	Demobilization of Portable Treatment Plant	EA				0
331 18 09 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 18 09 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 18 09 10	Testing	EA				0
331 18 09 11	Permits	EA				0
331 18 09 12	Training	EA				0
331 18 09 13	Final Closure	EA				0
331 18 10 00	Incinerator	CY				0
331 18 10 01	Solids Preparation and Handling	CY				0
331 18 10 02	Liquids Preparation and Handling	GAL				0
331 18 10 03	Vapor / Gas Preparation and Handling	CF				0
331 18 10 04	Pads / Foundations / Spill Control	SF				0
331 18 10 05	Mobilization / Setup of Portable Treatment Plant	EA				0
331 18 10 06	Startup	EA				0
331 18 10 07	Demobilization of Portable Treatment Plant	EA				0
331 18 10 08	Ownership / O&M / Rental of Portable Treatment Plant During Constr	MO				0
331 18 10 09	O&M of Permanent Treatment Plant During Construction	MO				0
331 18 10 10	Testing	EA				0
331 18 10 11	Permits	EA				0
331 18 10 12	Training	EA				0
331 18 10 13	Final Closure	EA				0
331 18 15 00	Construction of Permanent Disposal Facility					0
331 18 15 01	Substructure	SF				0
331 18 15 02	Superstructure	SF				0
331 18 15 03	Exterior Closure	SF				0
331 18 15 04	Roofing	SF				0
331 18 15 05	Interior Construction	SF				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 18 15 06 Interior Finishes	SF					0
331 18 15 07 Conveying Systems	SF					0
331 18 15 08 Plumbing	SF					0
331 18 15 09 HVAC	SF					0
331 18 15 10 Fire Protection System	SF					0
331 18 15 11 Electric Power and Lighting	SF					0
331 18 15 12 Electrical Systems	SF					0
331 18 15 13 Equipment	SF					0
331 18 15 14 Furnishings	SF					0
331 18 15 15 Special Construction	SF					0
331 18 20 00 Container Handling	EA					0
331 18 21 00 Transportation to Storage / Disposal Facility	TON	\$5.86	\$30.98	\$47.62	4	4
331 18 21 01 Loading / Hauling / Unloading of Solids	TON					0
331 18 21 02 Pumping / Hauling of Liquids / Sediments / Sludges	GAL					0
331 18 22 00 Disposal Fees and Taxes	TON		\$181.60		1	1
331 18 22 01 Landfill / Burial Grounds / Trench / Pits	TON					0
331 18 22 02 Above - Ground Vault	TON					0
331 18 22 03 Underground Vault	TON					0
331 18 22 04 Underground Mine / Shaft	TON					0
331 18 22 05 Tanks	GAL					0
331 18 22 06 Pads (Tumulus / Retrievable Storage / Other)	TON					0
331 18 22 07 Storage Buildings / Protective Cover Structures / Other Blds and Struct	TON					0
331 18 22 08 Cribs	TON					0
331 18 22 09 Deep Well Injection	GAL					0
331 18 22 10 Incineration	TON					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 18 23 00 Mixed Waste Storage Fees and Taxes	TON					0
331 19 00 00 DISPOSAL (COMMERCIAL)						0
331 19 20 00 Container Handling	EA	\$58.64	\$8,782.57	\$38,661.28	6	8
331 19 21 00 Transportation to Storage / Disposal Facility	TON	\$29.32	\$55.89	\$245.75	36	49
331 19 21 01 Loading / Hauling / Unloading of Solids	TON	\$43.06	\$113.21	\$252.26	7	8
331 19 21 02 Pumping / Hauling of Liquids / Sediments / Sludges	GAL	\$0.36	\$0.86	\$1.45	8	11
331 19 22 00 Disposal Fees and Taxes	TON	\$35.50	\$96.20	\$213.57	22	33
331 19 22 01 Landfill / Burial Grounds / Trench / Pits	TON		\$315.32		1	1
331 19 22 02 Above - Ground Vault	TON					0
331 19 22 03 Underground Vault	TON					0
331 19 22 04 Underground Mine / Shaft	TON					0
331 19 22 05 Tanks	GAL					0
331 19 22 06 Pads (Tumulus / Retrievable Storage / Other)	TON					0
331 19 22 07 Storage Buildings / Protective Cover Structures / Other Blds and Struct	TON					0
331 19 22 08 Cribs	TON					0
331 19 22 09 Deep Well Injection	GAL					0
331 19 22 10 Incineration	TON		\$60.83		1	1
331 19 23 00 Mixed Waste Storage Fees and Taxes	TON					0
331 20 00 00 SITE RESTORATION						0
331 20 01 00 Earthwork	CY	\$6.88	\$12.75	\$27.23	25	30

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 20 01 01 Rock Excavation	CY		\$27.34		1	1
331 20 01 02 Excavation / Fill	CY		\$11.74		2	2
331 20 01 03 Backfill	CY	\$4.62	\$12.47	\$18.05	4	6
331 20 01 04 Borrow	CY	\$4.88	\$14.34	\$25.68	6	7
331 20 01 05 Hauling	CY					0
331 20 01 06 Spreading	CY		\$48.35		1	3
331 20 01 07 Grading	SY		\$2.49		1	1
331 20 01 08 Compaction	CY		\$66.78		1	1
331 20 01 09 Scarification	CY					0
331 20 01 10 Harrowing	CY					0
331 20 01 11 Tracking	CY					0
331 20 01 12 Contour Furrowing	CY					0
331 20 01 13 Stockpiling	CY		\$17.97		1	1
331 20 01 14 Topsoil	CY		\$31.68		2	3
331 20 01 15 Settlement Markers	EA					0
331 20 01 16 Stripping	CY					0
331 20 02 00 Permanent Markers	EA					0
331 20 03 00 Permanent Features	EA	\$19,949.84	\$93,896.37	\$379,638.91	7	8
331 20 03 01 Roads	SY		\$17.70		2	2
331 20 03 02 Structures	SF					0
331 20 03 03 Utilities	LF		\$49.65		1	1
331 20 04 00 Revegetation and Planting	ACR	\$2,707.50	\$5,707.67	\$17,605.17	35	37
331 20 04 01 Seeding / Mulch / Fertilizer	ACR	\$3,476.21	\$3,972.69	\$5,877.44	14	14
331 20 04 02 Sodding	SY		\$5.88		2	2
331 20 04 03 Erosion Control Fabric	SY					0
331 20 04 04 Shrubs, Trees, Ground Cover	EA		\$566.17		1	2

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 20 04 05 Topsoil	CY		\$32.59		3	3
331 20 05 00 Removal of Barriers	EA					0
331 21 00 00 DEMOBILIZATION						0
331 21 01 00 Removal of Temporary Facilities	EA	\$1,425.42	\$5,287.76	\$10,837.08	18	19
331 21 01 01 Office Trailers	EA		\$6,240.09		3	3
331 21 01 02 Storage Facilities	SF		\$30.10		1	1
331 21 01 03 Observation Tower	EA					0
331 21 01 04 Decontamination Facilities for Personnel	EA					0
331 21 01 05 Decontamination Facilities for Construction Equip / Vehicles	EA		\$7,467.55		1	1
331 21 01 06 Temporary Cover Structure Over Contaminated Area	SY					0
331 21 01 07 Lunch / Break Trailer	EA					0
331 21 01 08 Laundry Facilities	SF					0
331 21 01 09 Emergency Medical Trailer / Facilities	SF					0
331 21 01 10 Toilets	EA					0
331 21 01 11 Barricades	EA					0
331 21 01 12 Equipment Maintenance Shop	SF					0
331 21 01 13 Warehouses	SF					0
331 21 01 14 Government Trailers	EA					0
331 21 01 15 Guard Houses	EA					0
331 21 01 16 Truck Scales	EA					0
331 21 01 17 Wastewater Holding Tanks	EA		\$65,290.76		1	1
331 21 01 18 Fire Suppression Systems	EA					0
331 21 01 19 POL Dispensing Station	EA					0
331 21 01 20 Photographic Laboratory	EA					0
331 21 01 21 Housing	EA					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 21 01 22 Shop Facilities	SF					0
331 21 01 23 Aggregate Surfacing	TON					0
331 21 01 24 Security Fencing	LF		\$12.59		1	1
331 21 01 25 Roads and Parking	SY		\$3.88		1	1
331 21 01 26 Culverts	LF		\$28.80		1	2
331 21 01 27 Walks	SF					0
331 21 01 28 Signs	EA					0
331 21 01 29 Grading	SY					0
331 21 01 30 Erosion Control	SY					0
331 21 02 00 Removal of Temporary Utilities	EA	\$349.88	\$2,573.51	\$4,903.44	5	6
331 21 02 01 Site Lighting	EA					0
331 21 02 02 Power Connection / Distribution	LF		\$33.89		1	1
331 21 02 03 Telephone / Communications Hookup	LF					0
331 21 02 04 Water Connection / Distribution	LF					0
331 21 02 05 Sewer Connection / Distribution	LF					0
331 21 02 06 Gas Connection / Distribution	LF					0
331 21 03 00 Final Decontamination	EA	\$8,629.18	\$21,715.15	\$75,925.95	6	6
331 21 04 00 Demobilization of Construction Equipment and Facilities	EA	\$3,654.11	\$8,570.16	\$20,573.23	30	30
331 21 04 01 Transport Vehicles Ownership / Operation	HR					0
331 21 04 02 Drivers	HR					0
331 21 04 03 Manifests	EA					0
331 21 04 04 Tolls	EA					0
331 21 04 05 Permits	EA					0
331 21 04 06 Escort Vehicles Ownership / Operation	HR					0
331 21 04 07 Construction Equipment Ownership / Operation	HR					0
331 21 04 08 Equipment Operators	HR					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 21 04 09 Final Disassembly and Takedown	HR					0
331 21 04 10 Turn in GFE	HR					0
331 21 05 00 Demobilization of Personnel	EA	\$2,573.51	\$5,997.08	\$18,304.27	14	14
331 21 06 00 Submittals	EA	\$2,698.42	\$4,700.67	\$7,747.92	14	14
331 21 06 01 Punch List	EA	\$1,430.39	\$4,772.66	\$7,747.92	4	4
331 21 06 02 Project Acceptance	EA					0
331 21 06 03 Survey Information	EA		\$519.94		1	1
331 21 06 04 Final QA / QC Reports	EA		\$5,490.31		2	2
331 21 06 05 Construction Documentation Report	EA		\$4,085.83		1	1
331 21 06 06 As - Built Drawings	EA		\$4,085.83		1	1
331 21 06 07 Removal Reports	EA		\$6,950.57		2	2
331 21 06 08 Regulatory Approvals	EA					0
331 21 06 09 O&M Manuals	EA					0
331 21 07 00 Construction Plant Takedown	EA		\$47,227.01		1	1
331 21 07 01 Concrete Batch	EA		\$47,936.50		1	1
331 21 07 02 Block	EA					0
331 21 07 03 Precast	EA					0
331 21 07 04 Asphalt	EA					0
331 21 07 05 Quarry Crusher / Screens	EA					0
331 22 00 00 GENERAL REQUIREMENTS (Optional Breakout)						0
331 22 01 00 Supervision and Management	MO					0
331 22 01 01 Program Manager	MO					0
331 22 01 02 Project Manager	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 01 03	General Superintendent	MO				0
331 22 01 04	Area Superintendent	MO				0
331 22 01 05	Civil Superintendent	MO				0
331 22 01 06	Carpenter Superintendent	MO				0
331 22 01 07	Mechanical Superintendent	MO				0
331 22 01 08	Electrical Superintendent	MO				0
331 22 01 09	Public Relations Officer	MO				0
331 22 01 10	Clerks, Typists, and Receptionists	MO				0
331 22 01 11	Vehicles	MO				0
331 22 01 12	Travel and Per Diem	MO				0
331 22 02 00	Administration Job Office	MO				0
331 22 02 01	Contract Administrator	MO				0
331 22 02 02	Comptroller	MO				0
331 22 02 03	Personnel Manager	MO				0
331 22 02 04	Office Manager	MO				0
331 22 02 05	Interpreter	MO				0
331 22 02 06	Accountant	MO				0
331 22 02 07	Bookkeeper	MO				0
331 22 02 08	Timekeeper	MO				0
331 22 02 09	Paymaster	MO				0
331 22 02 10	Payroll Clerks	MO				0
331 22 02 11	Stenographer	MO				0
331 22 02 12	Clerks, Typists, and Receptionists	MO				0
331 22 02 13	Mail Clerk	MO				0
331 22 02 14	Messengers	MO				0
331 22 02 15	Reproduction	MO				0
331 22 02 16	Computer Technicians	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 02 17	Computer Hardware and Software	MO				0
331 22 02 18	Office Supplies	MO				0
331 22 02 19	Mailing and Shipping	MO				0
331 22 02 20	Vehicles	MO				0
331 22 02 21	Travel and Per Diem	MO				0
331 22 03 00	Warehouse, Materials Handling, and Purchasing	MO				0
331 22 03 01	Chief Purchasing Agent	MO				0
331 22 03 02	Purchasing Agent	MO				0
331 22 03 03	Buyers	MO				0
331 22 03 04	Expeditors	MO				0
331 22 03 05	Traffic Manager	MO				0
331 22 03 06	Travel Clerks	MO				0
331 22 03 07	Shipping Clerks	MO				0
331 22 03 08	Inventory Control Manager	MO				0
331 22 03 09	Inventory Control Clerks	MO				0
331 22 03 10	Chief Warehouse Manager	MO				0
331 22 03 11	Receiving Clerk	MO				0
331 22 03 12	Charge Out Clerk	MO				0
331 22 03 13	Tool House Labor	MO				0
331 22 03 14	Common Labor	MO				0
331 22 03 15	Clerks and Typists	MO				0
331 22 03 16	Equipment for Lifting and Moving	MO				0
331 22 03 17	Office Supplies	MO				0
331 22 03 18	Mailing and Shipping	MO				0
331 22 03 19	Vehicles	MO				0
331 22 03 20	Travel and Per Diem	MO				0
331 22 04 00	Engineering, Surveying, and Quality Control	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 04 01	Project Engineer	MO				0
331 22 04 02	Civil Engineer	MO				0
331 22 04 03	Mechanical Engineer	MO				0
331 22 04 04	Electrical Engineer	MO				0
331 22 04 05	Geologist	MO				0
331 22 04 06	Hydrogeologist	MO				0
331 22 04 07	Scientist	MO				0
331 22 04 08	Nuclear (Radioactive) Engineer	MO				0
331 22 04 09	Field Engineer	MO				0
331 22 04 10	Surveyors	MO				0
331 22 04 11	Office Engineer	MO				0
331 22 04 12	Draftsman	MO				0
331 22 04 13	Engineering Clerks and Typists	MO				0
331 22 04 14	Cost Engineer and Cost Estimator	MO				0
331 22 04 15	Planning Engineer	MO				0
331 22 04 16	Schedulers	MO				0
331 22 04 17	Inspectors	MO				0
331 22 04 18	Construction Lab Technicians	MO				0
331 22 04 19	Waste Management Technicians	MO				0
331 22 04 20	CPM Schedule Monthly Updates	MO				0
331 22 04 21	Field Shop Drawing Service	MO				0
331 22 04 22	Surveying Supplies and Equipment	MO				0
331 22 04 23	Engineering Supplies and Equipment	MO				0
331 22 04 24	Quality Control Engineer	MO				0
331 22 04 25	Quality Control Manager	MO				0
331 22 04 26	Chemical Quality Control Manager	MO				0
331 22 04 27	Mailing and Shipping	MO				0
331 22 04 28	Vehicles	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 04 29	Travel and Per Diem	MO				0
331 22 05 00	Equipment Maintenance and Motor Pool	MO				0
331 22 05 01	Master Mechanic	MO				0
331 22 05 02	Mechanics	MO				0
331 22 05 03	Mechanic Helpers	MO				0
331 22 05 04	Spare Parts Manager	MO				0
331 22 05 05	Parts Clerk	MO				0
331 22 05 06	Motor Pool Manager	MO				0
331 22 05 07	Service Truck Driver	MO				0
331 22 05 08	Motor Pool Equipment Operator	MO				0
331 22 05 09	Motor Pool Driver	MO				0
331 22 05 10	Common Labor	MO				0
331 22 05 11	Fuel Truck and Labor	MO				0
331 22 05 12	Lube Truck and Labor	MO				0
331 22 05 13	Crane, Lifting Equipment and Labor	MO				0
331 22 05 14	Truck Scales	MO				0
331 22 05 15	Waste Water Holding Tanks	MO				0
331 22 05 16	POL Dispensing Station	MO				0
331 22 05 17	Vehicles	MO				0
331 22 05 18	Travel and Per Diem	MO				0
331 22 06 00	First Aid, Fire Protection, Traffic Control, and Security	MO	\$4,347.49		1	1
331 22 06 01	Field Doctor	MO				0
331 22 06 02	Field Nurse	MO				0
331 22 06 03	Medical Supplies	MO				0
331 22 06 04	Emergency Supplies	MO				0
331 22 06 05	Ambulance	MO				0
331 22 06 06	Field Fire Chief	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 06 07	Field Fire Fighter	MO				0
331 22 06 08	Fire Fighter Supplies	MO				0
331 22 06 09	Fire Truck	MO				0
331 22 06 10	Water Truck	MO				0
331 22 06 11	Fire Extinguishers and Fire Suppression Systems	MO				0
331 22 06 12	Traffic Flagmen	MO				0
331 22 06 13	Traffic Control Equipment	MO				0
331 22 06 14	Pilot Car	MO				0
331 22 06 15	Barricades	MO				0
331 22 06 16	Security Clerk	MO				0
331 22 06 17	Security Chief	MO				0
331 22 06 18	Security Officer	MO				0
331 22 06 19	Watchmen and Guards	MO	\$4,346.96		1	1
331 22 06 20	Vehicles	MO				0
331 22 06 21	Travel and Per Diem	MO				0
331 22 07 00	Health & Safety	MO				0
331 22 07 01	Certified Industrial Hygienist	MO				0
331 22 07 02	Radiation Protection Technologist (RPT)	MO				0
331 22 07 03	Certified Health Physicist	MO				0
331 22 07 04	ALARA (As Low As Reasonably Acceptable) Specialist	MO				0
331 22 07 05	Dosimetry Specialist	MO				0
331 22 07 06	Health Physics Trainer	MO				0
331 22 07 07	Site Safety & Health Officer	MO				0
331 22 07 08	Safety Engineer	MO				0
331 22 07 09	Safety Clerk	MO				0
331 22 07 10	Industrial Hygiene Technician	MO				0
331 22 07 11	Air Monitoring Technician	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 07 12	Respiratory Specialist	MO				0
331 22 07 13	Safety Monitor	MO				0
331 22 07 14	Health and Safety Training (HTW & RAD)	MO				0
331 22 07 15	Health and Safety Medical Exams	MO				0
331 22 07 16	Personal Prot Equip (Prot Clothing, Repirators, Air Supply, etc.)	MO				0
331 22 07 17	Laundry Service	MO				0
331 22 07 18	Heat and Cold Stress Monitoring	MO				0
331 22 07 19	Noise Monitoring	MO				0
331 22 07 20	Odor Monitoring	MO				0
331 22 07 21	On Site Communication System	MO				0
331 22 07 22	Emergency Eye Wash, Body Wash, and Shower	MO				0
331 22 07 23	Radioactive Contamination Protective Equipment	MO				0
331 22 07 24	Vehicles	MO				0
331 22 07 25	Travel and Per Diem	MO				0
331 22 08 00	Temporary Construction Facilities - Ownership	MO				0
331 22 08 01	Office Trailers and Facilities	MO				0
331 22 08 02	Office Furniture and Office Equipment	MO				0
331 22 08 03	Warehouse and Storage Trailers and Facilities	MO				0
331 22 08 04	Equipment Maintenance Shop	MO				0
331 22 08 05	Photographic Laboratory	MO				0
331 22 08 06	Emergency Medical Trailer and Facilities	MO				0
331 22 08 07	Guard House and Security Shack	MO				0
331 22 08 08	Construction Portable Toilets	MO				0
331 22 08 09	Temporary Site Fencing	MO				0
331 22 08 10	Observation Tower	MO				0
331 22 08 11	Decontamination Facilities for Personnel	MO				0
331 22 08 12	Decon Facilities for Construction Equipment and Vehicles	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 08 13	Waste Water Holding Tanks	MO				0
331 22 08 14	Lunch Break Trailer and Facilities	MO				0
331 22 08 15	Laundry Trailer and Facilities	MO				0
331 22 08 16	Barricades	MO				0
331 22 08 17	Government Trailers and Facilities	MO				0
331 22 08 18	Weather Station	MO				0
331 22 08 19	Shop Facilities	MO				0
331 22 08 20	Housing	MO				0
331 22 09 00	Temporary Construction Facilities - Operation	MO	\$181,818.20		1	1
331 22 09 01	Operations Manager	MO				0
331 22 09 02	Chefs and Cooks	MO				0
331 22 09 03	Kitchen Help	MO				0
331 22 09 04	Janitors and Cleaning Services	MO				0
331 22 09 05	Maintenance & Repair of Temporary Facilities	MO				0
331 22 09 06	Food and Food Supplies	MO				0
331 22 09 07	Cleaning Supplies	MO				0
331 22 09 08	Linen Supplies	MO				0
331 22 09 09	Personal Items	MO				0
331 22 09 10	Laundry Service	MO				0
331 22 09 11	Garbage Services	MO				0
331 22 09 12	Haul Road Maintenance	MO				0
331 22 09 13	Temporary Parking Lot Maintenance	MO				0
331 22 09 14	Vehicles	MO				0
331 22 09 15	Travel and Per Diem	MO				0
331 22 10 00	Project Utilities	MO				0
331 22 10 01	Telephone Usage	MO				0
331 22 10 02	Electrical Usage	MO				0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 10 03 Sewer Usage	MO					0
331 22 10 04 Water Usage	MO					0
331 22 10 05 Gas Usage	MO					0
331 22 11 00 Miscellaneous Project Expenses	MO					0
331 22 11 01 Craft Qualification Programs	MO					0
331 22 11 02 Start Up Programs	MO					0
331 22 11 03 Project Photographs	MO					0
331 22 11 04 Video Monitoring / Recording System	MO					0
331 22 11 05 Emergency Air Freight	MO					0
331 22 11 06 Submittals	MO					0
331 22 11 07 Project Signs	MO					0
331 22 11 08 Winterize Project and Temporary Heat	MO					0
331 22 11 09 Daily Site Cleanup	MO					0
331 22 11 10 Final Site Cleanup	MO					0
331 22 11 11 Permits	MO					0
331 22 11 12 Spare Parts Inventory	MO					0
331 22 11 13 Protect Existing Property	MO					0
331 22 11 14 Snow Removal	MO					0
331 22 11 15 Vehicles	MO					0
331 22 11 16 Meetings	MO					0
331 22 11 17 Travel and Per Diem	MO					0
331 22 12 00 Insurance, Interest, and Fees	MO					0
331 22 12 01 Builders Risk Insurance	MO					0
331 22 12 02 Equipment Floater Insurance	MO					0
331 22 12 03 Liability Insurance	MO					0
331 22 12 04 Pollution Liability Insurance	MO					0
331 22 12 05 Marine Insurance	MO					0

1/27/00

Notes:

* For WBS elements with less than 4 cost elements, only a Median is shown.

* Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.

HCAS Burdened Cost Ranges

WBS Element	Unit of Measure	Unit Cost Range			# Projects	# cost elements
		25th percentile	Median	75th percentile		
331 22 12 06 Interest for Financing	MO					0
331 22 12 07 Home Office (General and Administrative)	MO					0
331 22 12 08 Profit	MO					0
331 22 12 09 Bond	MO					0
332 00 00 00 Engineering During Construction (EDC)						0
333 00 00 00 Supervision & Administration (S&A) Construction Management						0



Notes:
 * For WBS elements with less than 4 cost elements, only a Median is shown.
 * Each HCAS project file has a series of costs, organized by the HTRW WBS. A single project may have more than one of these cost elements. Above, both the number of cost elements and projects are shown.