

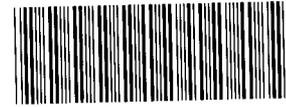
NOTICE

All drawings located at the end of the document.

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January 9, 1995
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Ms. Laurie Peterson-Wright
EG&G Rocky Flats, Inc.
P.O. Box 464, Bldg. 080
Golden, Colorado 80402-0464

Subject: Submittal of January 4, 1995, Meeting Minutes
Technical Working Group Meeting for Operable Unit No. 7
(MTS Contract 353017TB3)

Dear Ms. Peterson-Wright:

Enclosed are meeting minutes to document the January 4, 1995, technical working group meeting for the OU 7 Phase II field investigation and seep collection and landfill closure interim measure/interim remedial actions.

If you have any questions, please contact me at your convenience.

Sincerely,

Myra K. Vaag
Project Manager

Enclosure

cc:	W. Bartholomew w/o	EG&G	R. Anderson	Stoller
	L. Brooks	EG&G	B. Caruso	Stoller
	R. Cygnarowicz	EG&G	A. Crockett	Stoller
	T. Lindsay	EG&G	M. Eisenbeis	Stoller
	P. Martin	EG&G	S. Franklin	Stoller
	P. Corser	TerraMatrix	C. Gee	Stoller
			J. Jankousky	Stoller
			S. Lynn	Stoller
			D. Palmer	Stoller
			L. Ross w/o	Stoller
			B. Stephanus w/o	Stoller
			MKV Chron w/o	
			OU7 Project File	

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ADMIN RECORD

Minutes for the OU 7 Leachate/Landfill Closure
Technical Working Group Meeting
January 4, 1995

The following topics were discussed:

Landfill Closure IM/IRA

OU 5 Landfill Closure - EG&G and RUST are starting the feasibility study for closure of the old landfill in OU 5, which involves designing a landfill cover. In order to be consistent with the design work done for the landfill cover at OU 7, RUST requested input parameters for the HELP model (climate data, storm events, rooting depth, and soil type and number) and interface angles and input parameters for the stability analysis (horizontal or ground acceleration and earthquake events). TerraMatrix will provide the parameters requested. EG&G will follow up on the recent seismic investigation to see if new seismic hazard numbers have been developed for the Rocky Flats site, based on the presence of newly identified faults. The OU 7 stability analysis may have to be redone if the seismic hazard numbers have changed.

OU 7 Options Analysis - TerraMatrix presented options for the landfill cover section. DOE questioned the need for a 3-foot vegetative cover; the rooting zone is not that deep and there are additional costs associated with each foot of cover. Stoller suggested that a 3-foot vegetative cover is necessary to accommodate the frost line. DOE requested inclusion of a cover section with a bentonite mat (Claymax) instead of an FML or a discussion in the IM/IRA decision document of why the Claymax option was rejected. DOE will check to see if a cover design using Claymax has been approved at other sites in EPA Region VIII. Stoller and TerraMatrix suggested that a bentonite mat may experience slippage, would not channel water as effectively, and would not hold up as well as an FML.

TerraMatrix briefly discussed the five capping options. Net fill for options 1-4 ranges from 215,000 to 350,000 cubic yards. Option 5, which has a swale in the middle of the landfill, berms in a horseshoe shape around the swale, and involves cutting and filling with waste material, is still being developed. This option is being developed at DOE's request to reduce the volume of fill required. The capping options will be presented at the meeting next week.

Management Strategies for Agency Approval - CDPHE and EPA have received the first of four letters proposing management strategies on various issues for the IM/IRA at OU 7. (1) DOE has sent the wetlands assessment to Patricia Powell (NEPA) and has requested written verification that wetlands destroyed during construction of the seep collection system will be mitigated before landfill closure. (2) EG&G has prepared a letter proposing abandonment of wells in the landfill that fall under the footprint of the landfill cover. DOE will send the letter to EPA and CDPHE for approval. (3) EG&G prepared a letter proposing disposition of investigation-derived material. The letter will be sent to DOE after internal review. (4) EG&G is preparing a letter proposing consolidation of sediments and surface soils into the landfill before closure under RCRA. The IM/IRA is a RCRA corrective action instead of a RCRA closure, and releases from the source will be addressed under the corrective action.

CDPHE Conservative Screen - Stoller conducted a CDPHE risk-based conservative screen for PCOCs in surface soils around the East Landfill Pond and sediments. The maximum concentration or activity (max) and the residential programmatic risk-based preliminary remediation goal (PPRG) for each PCOC were used to calculate a max:PPRG ratio. If the max:PPRG ratio is less than 1 no further action is taken for that medium. If the max:PPRG ratio is greater than 1, a risk assessment is generally performed.

For sediments, the total ratio sum is greater than 1; the max:PPRG ratio is greater than 1 for arsenic, beryllium, and benzo(a)pyrene. It appears that the sediments must be addressed in the options analysis for the landfill closure IM/IRA. For surface soils, the total ratio sum is greater than 1; the max:PPRG

ratio is greater than 1 for arsenic. It is unclear what volume of surface soils must be addressed in the IM/IRA. Stoller will determine how many surface soil sampling locations have concentrations of arsenic greater than the PPRG and, of these, how many fall under the footprint of the landfill cover. Surface soils outside of the landfill cap will be addressed post closure.

Seep Collection and Treatment System PAM

After further discussions with the OU 1 and OU 2 treatment facility operators, it was determined that the sitewide treatment facility will not be implemented in time to meet the OU 7 requirements. Seep water from OU 7 will be pretreated with iron filtration and then treated at the existing OU 1 facility. DOE expects to receive a letter from the OU 1 facility operator on January 12 that guarantees treatment of OU 7 seep water. ARARs included in the draft PAM will be used as ARARs for treatment of the seep water.

EG&G has begun the leachate action construction process; the statement of work has been prepared and is undergoing review, and the Davis-Bacon determination process has been implemented. DOE has been investigating ways to accelerate construction of the seep collection and storage system. One suggestion is to order storage tanks now as government-furnished property using the technical specifications included in the Title II design and have the subcontractor install the tanks.

Phase II Field Investigation

Golder collected groundwater samples during the week of December 19; however, there was not enough water to collect QA samples. A 21-day turnaround was requested for the analyses; the data should be available January 19. Drawdown recovery tests were completed for wells 53094 and B207089. Stoller is analyzing the data with AQTESOLV to estimate the hydraulic conductivity of the units screened.

Stoller will transfer custody of field equipment to EG&G, develop and print core photographs, transmit LOGGER logs, transmit coordinates for sampling locations, and transmit field files in January.

Agency Meeting

The next agency meeting will be at 1:00 on February 2, 1995, at the EPA conference center. Stoller and TerraMatrix will present the status of the options analysis for the landfill closure IM/IRA decision document. EG&G will present the preferred treatment alternative for the OU 7 seep water.

Action Items

The formal meeting minutes are the forum for tracking action items. A list of the action item, the person responsible for the action, and the status of the action item is included below. The list will be updated weekly. When an action has been completed, it will be stated as such, and the item will be removed from the action item list the following week.

01-102 Completed.

103 Provide Stoller and TerraMatrix with copies of the Final Borrow Study Report, which is due to be released by November 18 (T. Lindsay, EG&G). The Borrow Study Report is due to be released on December 16. EG&G provided two copies of the borrow study report to Stoller on December 19. Completed.

- 104-121 Completed.
- 122 Determine possible trucking route from Western Aggregates to the present landfill east of Colorado Highway 93 (T. Lindsay, EG&G). EG&G is investigating options for a trucking route including improving existing roads or constructing new roads in the buffer zone between Western Aggregates and OU 5 and OU 7. In progress.
- 123-124 Completed.
- 125 Obtain the schedule for the new landfill and determine how it will affect the schedule for closure of the present landfill (L. Peterson-Wright, EG&G). The new landfill is scheduled to open in November 1995. DOE would like to accelerate the OU 7 schedule in order to close the present landfill soon after the new landfill is operational. EG&G has looked at the schedule and does not think that an 18-month acceleration is possible. Completed.
- 126-131 Completed.
- 132 Check with EG&G procurement and begin preparing the statement of work for construction of the seep collection system (L. Peterson-Wright and P. Martin, EG&G). The draft statement of work has been prepared and is undergoing internal review at EG&G. Completed.
- 133-147 Completed.
- 148 Find out if the agencies approved use of stream sediment data for PCOC identification in pond sediments at OU 5 or OU 6 (L. Peterson-Wright, EG&G). The agencies did not approve the use of stream sediment data for PCOC identification. Completed.
- 149 Obtain a copy of the cover design for the solar ponds at OU 4 (T. Lindsay, EG&G).
- 150 Obtain information regarding cover designs for Lowry Landfill, Marshall Landfill, and RMA (T. Lindsay, EG&G). EG&G provided Stoller with information on cover designs from Hanford and Los Alamos. In progress.
- 151 Completed.
- 152 Revise grading options using new topography map to incorporate (1) a swale in the middle of the landfill to reduce the volume of fill, (2) a 5-percent slope instead of a 7-percent slope, and (3) possibly excavating and moving waste material from the east end of the landfill to use for fill in the center of the landfill (P. Corser, TerraMatrix). TerraMatrix is revising the grading options in accordance with comments from DOE. Completed.
- 153 Completed.
- 154 Ask surveyors to survey the stock piles northwest of the landfill (T. Lindsay, EG&G). The stock piles north of the landfill are not available for use as fill and, therefore, surveying them is not necessary. Completed.
- 155 Develop cost estimates for various capping options to present at the agency interface meeting, if necessary (B. Caruso, Stoller, and P. Corser, TerraMatrix). Completed.

- 156 Determine the status of the sitewide ARARs document (L. Peterson-Wright, EG&G). The draft document has been completed and is undergoing review. EG&G and DOE are meeting with EPA and CDPHE to finalize ARARs. If the sitewide ARARs document is not approved by March 15, EPA will provide ARARs for Rocky Flats. Completed.
- 157 Provide Stoller and TerraMatrix with information on waste/fill ratios and settlement from Savannah River and other DOE sites (T. Lindsay, EG&G). Tom Lindsay provided a report to Stoller and TerraMatrix on settlement at Savannah River. Completed.
- 158 Determine allowable activities for radiological contaminants in soils/sediments (L. Peterson-Wright, EG&G).
- 159 Run CDPHE Conservative Screen on all soils/sediments at OU 7 (M. Vaag, Stoller). Stoller completed the CDPHE screen for surface soils and sediments. Completed.
- 160 Investigate costs for OU 1 hot-spot removal (P. Martin, EG&G). EG&G provided Stoller with costs for the hot-spot removal. Completed.
- 161 Provide Stoller with procedure for finalizing PAM (L. Peterson-Wright, EG&G). Stoller will provide 10 copies of the final PAM, dated December 14; 25 copies of the color figures; 1 original; 1 double-sided print copy; and 1 copy on disk on Tuesday, December 20, as directed by EG&G. Completed.
- 162 Provide RUST with input parameters for the HELP model and interface angles and other parameters for the stability analysis in order to maintain consistency in landfill cover design between OUs (J. Kendall, TerraMatrix).
- 163 Obtain a value for ground acceleration and information on the frequency of earthquake events from the Seismic Investigation Program for use in the stability analysis at OU 7 and OU 5 (L. Peterson-Wright, EG&G).
- 164 Determine if Claymax has been approved by EPA Region VIII for cap designs at other sites (P. Pigeon, RTG for DOE).
- 165 Determine how many surface soil sampling locations have concentrations of arsenic that exceed the PPRG and/or exceed background. Of these locations, investigate how many fall under the proposed landfill cap (M. Vaag, Stoller).
- 166 Check with the OU 1 project manager to determine if arsenic and beryllium have been remediated to background or to the PPRG (L. Peterson-Wright, EG&G). The contaminants of concern at OU 1 were manganese and beryllium, not arsenic. EG&G will check with the OU 4 project manager. In progress.
- 167 Follow up on the sample of seep water collected for TOC analysis (P. Pigeon, RTG for DOE).
- 168 Arrange to retrieve the core photograph negatives for the Phase I field investigation from the EG&G Records Center (L. Peterson-Wright, EG&G). The negatives will be retrieved on January 10. Stoller will send the negatives out and have prints made. Completed.
- 169 Determine if surveying data for Phase II sampling locations should be transmitted to RFEDS or to EG&G GIS (L. Peterson-Wright, EG&G). Surveying data should be

transmitted to RFEDS. Stoller will submit the data in digital format to the OU 7 Project Manager, who will transmit the data to RFEDS. Completed.

- 170 Transfer Phase II field equipment from Stoller to EG&G (S. Lynn, Stoller, and L. Peterson-Wright, EG&G). Field equipment will be transferred to EG&G during the week of January 9, after water in the purge tank has been disposed. In progress.

Next Meeting

The next meeting will be at 10:00 on January 11, 1995, in the EG&G small west conference room.

List of Attendees

Name	Organization	Phone
Brian Caruso	Stoller	546-4338
Mary Eisenbeis	Stoller	546-4474
Scott Hollowell	EG&G (OU 5)	966-8748
John Jankousky	Stoller	546-4412
John Kendall	TerraMatrix	763-5140
Laurie Peterson-Wright	EG&G Project Manager	966-8553
Paul Pigeon	RTG/RFFO-AMPME	966-5611
Myra Vaag	Stoller Project Manager	546-4417
Mark Yaskanin	RUST (OU 5)	694-6660

Risk A:

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Landfill Closure
Seep Collection
Project Team

Wednesday, January 4, 1994

1. Landfill Closure

drawings

Introduce OU 5 Landfill Cap Team

2. Seep Collection

3. Phase II Field Investigation

1. ~~Field~~

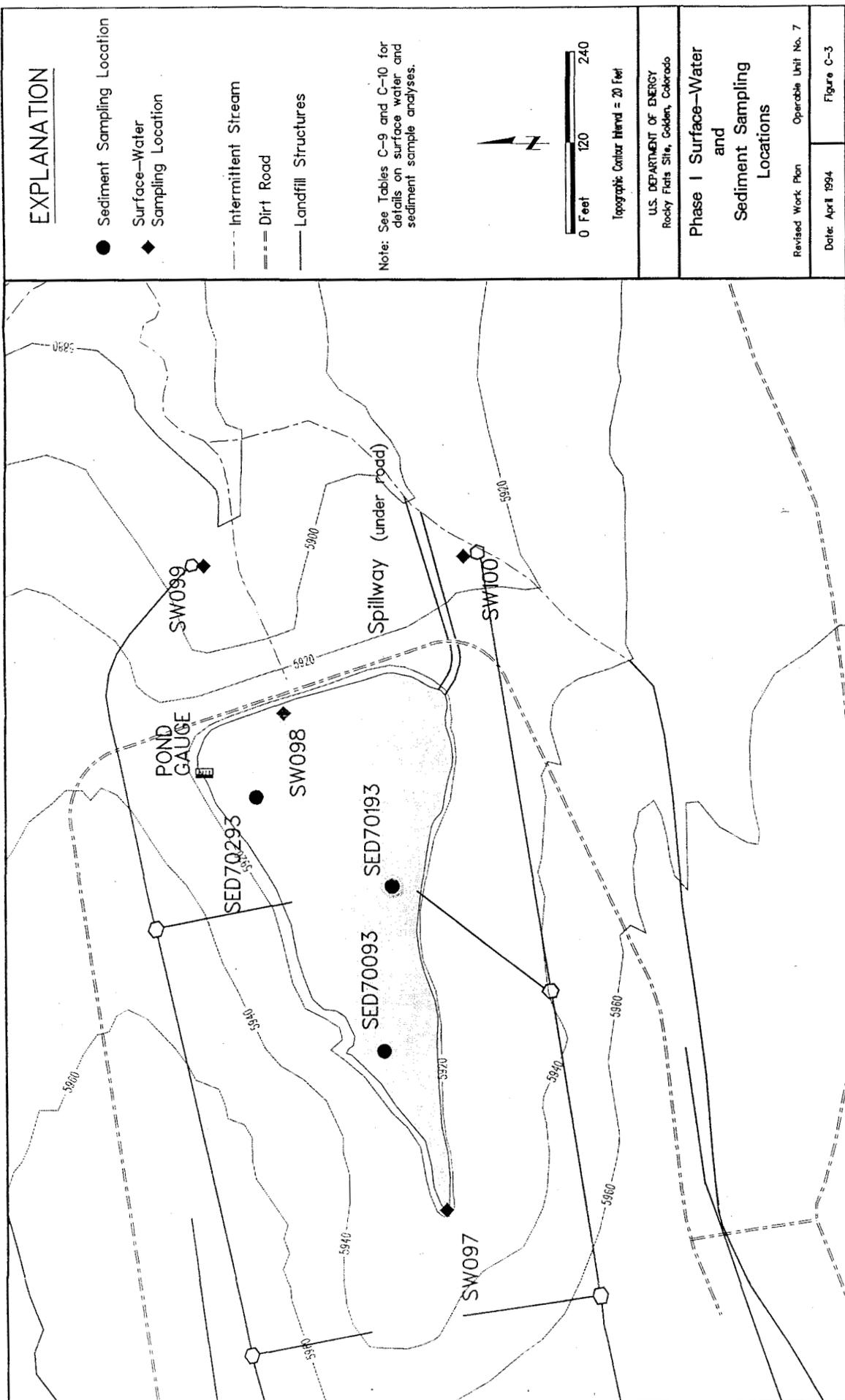
Option

*cover seal
cap design
interior*

highlights

*look at
Vegetation*

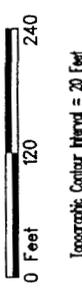
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EXPLANATION

- Sediment Sampling Location
- ◆ Surface-Water Sampling Location
- - - Intermittent Stream
- - - - - Dirt Road
- Landfill Structures

Note: See Tables C-9 and C-10 for details on surface water and sediment sample analyses.



Topographic Contour Interval = 20 Feet

U.S. DEPARTMENT OF ENERGY
Rocky Flats Site, Golden, Colorado

Phase I Surface-Water and Sediment Sampling Locations

Revised Work Plan Operable Unit No. 7

Date: April 1994 Figure C-3

Operable Unit 7
CDPHE Risk-based Conservative Screen
PCOCs in East Landfill Pond Sediments

Analyte	Maximum Concentration or Activity (Max)	Location of Maximum Concentration or Activity	Programmatic PRG Residential Soil*	Max:PPRG Ratio
Metals (mg/kg)				
ALUMINUM	16,600	SED70193	NA	NA
ARSENIC	5	SED70193	3.66E-01	13.7
BARIUM	215	SED70093	1.91E+04	0.0113
BERYLLIUM	1.5	SED70193	1.49E-01	10.1
CALCIUM	7,850	SED70193	NA	NA
CHROMIUM**	17.5	SED70193	2.74E+05	0.0000639
COPPER	18.6	SED70193	1.10E+04	0.00169
IRON	15,400	SED70193	NA	NA
LEAD	33.7	SED70193	NA	NA
MAGNESIUM	3,250	SED70193	NA	NA
NICKEL	15.3	SED70093	5.49E+03	0.00279
POTASSIUM	2,640	SED70193	NA	NA
SELENIUM	1.1	SED70193	1.37E+03	0.000803
SODIUM	447	SED70193	NA	NA
STRONTIUM	61.5	SED70193	1.65E+05	0.000373
VANADIUM	41	SED70193	1.92E+03	0.0214
ZINC	187	SED70093	8.23E+04	0.00227
Ratio Sum (metals)				23.8
Radionuclides (pCi/g)				
CESIUM-137	0.732	SED70093	2.83E+01	0.0259
Ratio Sum (radionuclides)				0.0259
Semivolatile Organic Compounds (ug/kg)***				
ACENAPHTHENE	670	SED70193	1.65E+04	0.0000406
ACENAPHTHYLENE	790	SED70093	NA	NA
ANTHRACENE	670	SED70193	8.23E+04	0.00000814
BENZO(a)ANTHRACENE	670	SED70193	8.77E-01	0.764
BENZO(a)PYRENE	670	SED70193	8.77E-02	7.64
BENZO(b)FLUORANTHENE	670	SED70193	8.77E-01	0.764
BENZO(ghi)PERYLENE	670	SED70193	NA	NA
BENZO(k)FLUORANTHENE	670	SED70193	8.77E+00	0.0764
BENZOIC ACID	870	SED70093	1.10E+06	0.000000791
BIS(2-CHLOROISOPROPYL)ETHER	790	SED70093	9.15E+00	0.0863
BIS(2-ETHYLHEXYL)PHTHALATE	670	SED70193	4.57E+01	0.0147
CHRYSENE	670	SED70193	8.77E+01	0.00764
FLUORANTHENE	830	SED70093	1.10E+04	0.0000755
FLUORENE	670	SED70193	1.10E+04	0.0000609
INDENO(1,2,3-cd)PYRENE	670	SED70193	8.77E-01	0.764
PHENANTHRENE	670	SED70193	NA	NA
PYRENE	750	SED70093	8.23E+03	0.0000911
Ratio Sum (SVOCs)				10.1
Volatile Organic Compounds (ug/kg)***				
2-BUTANONE	35	SED70093	1.65E+05	0.000000212
TOLUENE	440	SED70293	5.49E+04	0.00000801
Ratio Sum (VOCs)				0.00000823
TOTAL RATIO SUM				33.9

* PPRG values are from Programmatic Risk-based Preliminary Remediation Goals Final Revision 1 (DOE 1994)

** PPRG value is for chromium III

*** PPRGs for organics are reported in mg/kg and converted to ug/kg to calculate the max:PPRG ratio

NA - not applicable (no PPRG value is available for analyte)

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Operable Unit 7
 CDPHE Risk-based Conservative Screen
 East Landfill Pond
 PCOCs in Surface Soils (0 to 2 inches)

Analyte	Maximum Concentration or Activity (Max)	Location of Maximum Concentration or Activity	Programmatic PRG Residential Soil*	Max:PPRG Ratio
Metals (mg/kg)				
* ARSENIC	13.2	SS705393	3.66E-01	36.1
BARIUM	1,120	SS705193	1.91E+04	0.0586
CALCIUM	54,800	SS705093	NA	NA
LEAD	167	SS708893	NA	NA
MAGNESIUM	7,910	SS700293	NA	NA
SODIUM	1,280	SS708293	NA	NA
STRONTIUM	80.6	SS720193	1.65E+05	0.000488
VANADIUM	86.2	SS705293	1.92E+03	0.0449
ZINC	101	SS707393	8.23E+04	0.00123
Ratio Sum (metals)				36.2
Radionuclides (pCi/g)				
AMERICIUM-241	1.076	SS703793	2.37E+00	0.454
RADIUM-226	1.787	SS711193	2.28E+00	0.784
Ratio Sum (radionuclides)				1.24
Water Quality Parameters (mg/kg)				
NITRATE/NITRITE**	45	SS710893	2.74E+04	0.00164
Ratio Sum (WQPs)				0.00164
TOTAL RATIO SUM				37.4

* PPRG values are from Programmatic Risk-based Preliminary Remediation Goals Final Revision 1 (DOE 1994)

** PPRG value is for nitrite

NA - not applicable (no PPRG value is available for analyte)

Operable Unit 7
 CDPHE Risk-based Conservative Screen
 East Landfill Pond
 PCOCs in Surface Soils (0 to 10 inches)

Analyte	Maximum Concentration or Activity (Max)	Location of Maximum Concentration or Activity	Programmatic PRG Residential Soil*	Max:PPRG Ratio
Metals (mg/kg)				
* ARSENIC	15.7	SS702293	3.66E-01	42.9
BARIUM	546	SS708093	1.91E+04	0.0286
CALCIUM	37,700	SS708593	NA	NA
SELENIUM	2.4	SS702593	1.37E+03	0.00175
Ratio Sum (metals)				42.9
Radionuclides (pCi/g)				
AMERICIUM-241	0.05813	SS711493	2.37E+00	0.0245
Ratio Sum (radionuclides)				0.0245
TOTAL RATIO SUM				43.0

* PPRG values are from Programmatic Risk-based Preliminary Remediation Goals Final Revision 1 (DOE 1994)

NA - not applicable (no PPRG value is available for analyte)

