

**MAXEY FLATS
NUCLEAR DISPOSAL SITE
CALENDAR YEAR 2007
SUMMARY REPORT**

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Prepared By

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MFNDS CY 2007 SUMMARY REPORT

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MFNDS CY 2007 SUMMARY REPORT

Introduction

Nine hundred fifty eight (958) water samples were collected during calendar year (CY) 2007 from the environment within 4.5 air miles of the Maxey Flats Nuclear Disposal Site (MFNDS) (**Figure 1**). The Radiation/Environmental Monitoring Section (REMS) of the Radiation Health Branch (RHB) performed 3,591 analyses on these samples. An additional 17,352 quality control (QC) analyses were performed to ensure the accuracy and precision of the analytical results. The 17,352 QC analyses includes all daily, instrument, and run QC analyses. In previous reports QC numbers did not include all these QC activities. The total QC represents the actual QC numbers for 2007. Data was validated by an independent third party.

Surface water and groundwater samples were collected from the MFNDS and its environs in CY 2007. Surface water samples were collected from on-site streams (within the original licensed area) and off-site streams (outside the original licensed area), drains, washes, ditches, and retention basins. Groundwater samples were collected from drinking-water wells and U. S. Geological Survey (USGS) monitoring wells. Samples were also collected from the public water supply in Hillsboro, Kentucky. Analytical data generated from the MFNDS sampling locations is provided in attached data summaries.

In CY 2007, the REMS conducted extended radionuclide analyses on groundwater samples from the USGS monitoring wells outside the restricted area and on samples from select surface water locations and seeps. Extended radionuclide analyses of monitoring-well groundwater, surface water, and seep-water samples provided the RHB with information regarding contaminant migration from the burial trenches following completion of Initial Remedial Phase Superfund activities.

When sufficient data was available for off-site and on-site sampling locations, descriptive and comparative statistical analyses were performed. Descriptive statistical analyses were conducted for most locations. Assessment was conducted to evaluate the potential short and long-term impacts of the MFNDS on public health, safety and the environment. Data collected during 2007 can be utilized to assess whether the actions implemented during the Initial Remedial Phase under Superfund at the MFNDS were successful in meeting remedial goals.

Laboratory Considerations

The sample minimum detectable activity (MDA) for tritiated water (HTO) measurements by the REMS laboratory ranged from 0.3 picocuries/milliliter (pCi/ml) for 5.0 ml sample aliquots used in the analysis of all on-site, off-site, drinking wells, some monitoring wells, and soil water samplers to 16.5 pCi/ml for 0.1 ml aliquots used in the analysis of various and monitoring well water samples. The MDA for gross alpha-particle activity is sample volume dependent and was approximately 2.2 pCi/l for 200 ml aliquots that increased with a decrease in sample aliquot volume. The MDA for gross beta-particle activity is also sample volume dependent and was approximately 4.0 pCi/l for 200 ml aliquots with a corresponding increase in the MDA as sample volume aliquots decreased.

Background and Off-Site Monitoring

Mean HTO activity for sample locations ranged from less than the MDA at background and off-site sampling locations, to 77.7 pCi/ml at the old site license boundary, Location 144, in the East Main Drainage Channel. Background and off-site surface-water sample locations (**Figure 1**) included; Crane Creek (ST119) on Highway 32, Crane Creek on Rawlings Road (ST121), Fox Creek off Highway 158 (ST130), Fox Creek on Highway 111 (ST136), Rock Lick Creek above its confluence with No-Name Creek (ST122), and Rock Lick Road at the first bridge (ST101).

HTO activity in groundwater samples from the background drinking-water well, ST112, north of the site at Highway 1895 was below the laboratory reported sample MDAs (**Figure 2**). The first two samples for calendar year 2007 from ST142 had HTO activity above laboratory reported sample MDAs while the third sample taken in October of 2007 had HTO activity below the laboratory reported sample MDA (**Figure 2**).

East Main Drain Seep Monitoring

Samples collected from a biomonitoring plot in 1990 established the contamination zone on the East Main Drain Hillside. The plume of HTO activity associated with the seeps on the East Main Drain Hillside was mapped by using data from the biomonitoring network. The biomonitoring plot results indicated that HTO moves through the colluvium on the East Main Drain Hillside to the East Main Drainage Channel above the 800' elevation (above Location 113). REMS personnel have monitored the East Main Drain Hillside seeps since 1990.

Table 1-1 presents the HTO data for seeps on the East Main Drain Hillside (**Figure 3**) from January through December 2007. This

data indicates that a pulse of HTO activity in groundwater continues to migrate from the 40-Series trenches to the East Main Drain Hillside. Since this movement is most likely through fractures in the Upper/Lower Farmers Members underlying the East Side of the site, it may have been difficult to mitigate during remediation of the facility. The RHTAB continues to monitor the East Main Drain Hillside for further evidence of radionuclide activity.

TABLE 1-1. CY 2007 East Drain Seep Data

Tritium data for Water Samples were collected from Seeps on the East Hillside at the Maxey Flats Nuclear Disposal Site.

Collection Date	UFS-1		UFS1N		LFS-2	
	pCi/ml	CU	pCi/ml	CU	pCi/ml	CU
1/10/2007	(a)		(a)		2724	3
4/3/2007	(a)		(a)		2222	3
4/23/2007	5305	5	(a)		2346	3
6/14/2007	(a)		(a)		4678	5
7/2/2007	(a)		(a)		4735	4
8/7/2007	(a)		(a)		1782	3
9/6/2007	(a)		(a)		5919	5
10/31/2007	(a)		(a)		4816	5
11/20/2007	(a)		(a)		4841	5
12/12/2007	(a)		(a)		1387	3

(a) No samples taken because of low flow along the face of the lower Farmers' outcrop. CU=Counting Uncertainty

TABLE 1-2. East Hillside Annual Seep Data

Annual Seeps located on Farmers outcrops on East Hillside April 23, 2007

Location	HTO		Gross alpha		Gross beta		Gamma
	pCi/ml	CU	pCi/l	CU	pCi/l	CU	pCi/l
UFS1	5305	5	12.7	8.3	50.5	11.6	<MDA
UFS1N	(a)	(a)	(a)	(a)	(a)	(a)	(a)
LFS2	2346	3	-8.8	7	12	10	<MDA
EMR1	5835	5	17	9	50	12	<MDA
EMR2	4811	5	4	6	32	11	<MDA
EMR3	5448	5	2	7	36	11	<MDA
EMR4	2131	3	-2	6	-4	9	<MDA
EML4	3	0.2	10	7	5	10	<MDA

a = No samples taken because of low flow along the face of the lower Farmers' outcrop. Italics = Reported value below sample MDA or error greater than 50% of the reported value. MDA=Minimum Detectable ACTIVITY. CU=Counting Uncertainty.

East Drain seeps USF1, LFS2, EMR1, EMR2, EMR3, EMR4, and EML4 were collected during the annual seep sample collection in CY 2007. The data for these East Main Drain Hillside Seeps is presented in Table 1-2.

Elevated HTO activity was detected in samples collected from the Farmers outcrop seeps to the North of the East Main Drain at the six (6) locations sampled in CY 2007. Water collected from locations at the East Main Drain Seeps on April 23, 2007 was also analyzed for gamma emitting radionuclides.

East Main Drain Monitoring

The HTO activity at East Main Drain sampling locations 113 and 144 (**Figure 4**) is representative of the discharge to surface water of leachate-contaminated groundwater that has migrated through the subsurface from the 40-Series disposal trenches to the East Main Drainage Channel. The average HTO activity at Location 144 in the East Main Drainage Channel was 52 pCi/ml in CY 2002, 60 pCi/ml in 2003, 90 pCi/ml in 2004, 50 pCi/ml in 2005, 52 pCi/ml in 2006, and 78 pCi/ml in 2007. The average HTO activity at location 113 was 64 pCi/ml in CY 2002, 84 pCi/ml in 2003, 153 pCi/ml in 2004, 106 pCi/ml in 2005, 126 pCi/ml in 2006, and 181 pCi/ml in 2007.

The HTO activity at East Main Drainage Channel locations 113 and 144 remain elevated relative to HTO activity upgradient and upslope at the outlet of the East Main Drainage Retention Pond (EDOUTL). However, too few samples were collected at the EDOUTL and within the east drain pond to conduct a valid statistical comparison.

The mean HTO activity for the East Drain ISCO automatic sampler (EDRN) at 800 feet above mean sea level (MSL) in the East Main Drainage Channel (**Figure 5**) was 103 pCi/ml in 2002, 106 pCi/ml in 2003, 133 pCi/ml in 2004, 111 pCi/ml in 2005, 82 pCi/ml in 2006, and 135 pCi/ml in 2007. Automatic samplers composites samples on a daily basis. EDRN HTO activity for CY 2006 ranged from 1.9 to 269 pCi/ml and in CY 2007 ranged from 0.2 to 525 pCi/ml.

The results of surface water ⁹⁰Sr analyses for the first (1st) through fourth (4th) quarters of CY 2007 are presented in **Table 1-3**.

TABLE 1-3. Strontium-90 (⁹⁰Sr) surface water data for CY 2007.

Strontium-90 Analysis of Water Samples Collected at the Maxey Flats Nuclear Disposal Site on January 10, 2007.

	⁹⁰ Sr	
Location	pCi/liter	CU*
102	0.4	0.7
103	1.8	0.9
106	1.7	0.9
107	0.8	0.9
122	0.7	0.8
143	1.8	1.1
144	1.0	0.8

Bold Italics = Reported Values Below MDA; CU=Counting Uncertainty

Strontium-90 Analysis of Water Samples Collected at the Maxey Flats Nuclear Disposal Site on April 3, 2007.

	⁹⁰ Sr	
Location	pCi/liter	CU*
103	-0.9	0.7
106	0.07	0.9
107	0.2	0.9
122	-1.2	0.9
143	-0.7	0.9
144	-0.2	0.9

Bold Italics =Reported Values Below MDA; CU=Counting Uncertainty

Strontium-90 Analysis of Water Samples Collected at the Maxey Flats Nuclear Disposal Site on August 7, 2007.

	⁹⁰ Sr	
Location	pCi/liter	CU*
102QC	-0.09	0.8
103	0.5	0.8
106	-0.33	-0.7
107	0.7	0.8
122	0.0	0.7
144	0.7	0.8
145	-0.3	0.7
EDOUT	-0.8	0.7

Bold Italics =Reported Values Below MDA; CU=Counting Uncertainty

Strontium-90 Analysis of Water Samples Collected at the Maxey Flats Nuclear Disposal Site on October 31, 2007.

	⁹⁰ Sr	
Location	pCi/liter	CU*
102	-0.8	0.7
103	0.6	0.7
106	-0.08	0.7
107	0.3	0.7
113	1.5	1.6
145	-0.9	1.1
122	-0.2	0.7

Bold Italics = Reported Values Below MDA; CU=Counting Uncertainty

West Hillside Surface Water Monitoring

Surface water sampling locations in Wash 107 from the middle of the hillside, location G107, downgradient/downslope to the dirt road, W7ATRD, had elevated HTO activity compared to levels of HTO activity above the middle of the hillside at locations H107, I107 and J10. The HTO activity in surface water sampling locations from the middle of the hillside to in Wash 107 to downslope locations at the bottom of the west hillside indicate that HTO continues to move from the western series disposal trenches to the west hillside via subsurface pathways.

The mean HTO activity for location 102 grab-samples collected at the junction of Rock Lick Creek and Highway 158 was 0.6 pCi/ml in 2002, 0.7 pCi/ml in 2003, 0.9 pCi/ml in 2004, 0.8 pCi/ml in 2005, 0.6 pCi/ml in 2006, and 0.9 pCi/ml in 2007. The mean HTO activity in Drip Springs Creek Location 103 grab-samples (Figure 8) was 0.7 pCi/ml in 2002, 0.6 pCi/ml in 2003, 0.6 pCi/ml in 2004 0.6 pCi/ml in 2005, 0.4 pCi/ml in 2006, and 0.6 pCi/ml in 2007. The HTO activity at these two (2) sampling locations may reflect stabilization of HTO discharges due to controls established during the Initial Remedial Phase to minimize release of HTO from the Earthen Mound Concrete Bunkers.

USGS Monitoring Well Sampling

Extended radionuclide analysis of water from selected United States Geological Survey (USGS) monitoring wells (**Figure 7**) continued in CY 2007. Extended radionuclide analyses were evaluated in order to monitor the flux of contaminants in groundwater contaminant plumes located under the Northwest corner of the Restricted Area. All monitoring wells along the eastern side of the Restricted Area were abandoned during the Initial Remedial Phase. Extended radionuclide data collected during CY 2007 along with data collected from CY 2000 through 2006 is critical for establishing trends that can be utilized for assessment of the performance and effectiveness of Initial Remedial Phase actions.

Extended radionuclide analyses were conducted for USGS monitoring well groundwater samples collected in April and October 2007. Extended radionuclide analyses included; Strontium-90 (^{90}Sr), carbon-14 (^{14}C), plutonium-238 (^{238}Pu), plutonium-239 (^{239}Pu), uranium-238 (^{238}U), uranium-235 (^{235}U), and uranium-234 (^{234}U)

CY 2007 Observations for Water from USGS Monitoring Wells

- Elevated levels of gross alpha-particle activity were detected in water from monitoring wells UF-2 and UE-2 in October 2007.
- Specific alpha analyses were performed for the following radionuclides: ^{234}U , ^{235}U , ^{238}U , ^{238}Pu , and ^{239}Pu . Tables 1-4a and 1-4b present the activity of these isotopes for wells UE-2, UF-2, UK-1, N2B, and UF10a.
- Based on the data in Table 1-4a and 1-4b, alpha-emitting radionuclides are distributed in Lower Marker Bed (LMB) groundwater in the north/northwest portion of the Restricted Area and adjacent areas.
- Groundwater from wells UE2, UF-2, UK-1, and UF10a had ^{234}U activity that exceeded sample specific MDAs for both the April and October 2007. Uranium-234 activity in well N2B did not exceed the sample specific MDA in April 2007.
- Wells UF2, UK1, and N2B had ^{238}U activity in groundwater that did not exceed sample specific MDAs for samples collected in April CY 2007. Wells UE-2 and UF10a had ^{238}U activity exceeding sample specific MDAs for the April 2007 samples. Wells UE-2, UF2, UK1, N2B, UF10a had ^{238}U activity that exceeded sample specific MDAs for the October 2007 samples.
- The maximum activity for ^{238}U in the monitoring wells tested ranged from 5.9/1.1 pCi/l (activity/counting uncertainty) in well UF10a to activity less than the MDA.
- Uranium-235 activity was below the MDA or had counting uncertainty greater than 50% of the activity for monitoring well water samples.
- The activity of ^{234}U exceeded the activity of ^{238}U in the wells listed in Tables 1-4a and 1-4b suggesting that natural or depleted uranium is not the source of the ^{234}U or that the activity may be due to another isotope of uranium. Based on analysis of alpha spectroscopy data by REMS staff, the elevated activity may be due to the presence of ^{233}U .
- In October 2007 the ^{234}U (or possibly ^{233}U) activity in water from USGS Monitoring well UE-2 was 20.0/2.8 pCi/l (activity/counting uncertainty), UF-2 was 15.0/2.2 pCi/l, UK-1 was 13.5/2.0 pCi/l, N2B was 17.0/2.4 pCi/l, and UF-10a was 15.2/2.3 pCi/l.
- In April 2007, the ^{234}U activity in well UE-2 was 19.4/2.4 pCi/l (activity/counting uncertainty), UF-2 was 9.0/1.4 pCi/l, UK-1 was 4.7/1.0 pCi/l, N2B was **0.6/0.4** pCi/l, and UF-10a was 2.9/0.7 pCi/l.
- If the activity is due to the presence of ^{234}U , the maximum activity of 20.0/2.8 pCi/l is 6.67% of the limit of 300 pCi/l imposed by 902 KAR 100:019, for controlled release of ^{234}U outside the boundary of a disposal trench.
- Plutonium-238 activity was above sample-specific MDAs in wells UE-2, UF-2, UK-1, and N2B for both April and October 2007.

Water from well UF-10a was below sample specific MDAs for April 2007.

- Plutonium-239 activity was below sample specific MDAs in wells UE-2, UF-2, UK-1, N2B, and UF10a.
- The maximum activity of ^{238}Pu , 6.9/2.1 pCi/L was observed in well UK-1.
- The ^{238}Pu activity in CY 2007 for UK-1 was 34.5% of the limit of 20 pCi/l imposed by 902 KAR 100:019, for controlled release of ^{238}Pu outside the boundary of a disposal trench.
- Strontium-90 activity was above sample specific MDAs in water from USGS monitoring wells UE-2, UF-2, and UK-1, for both April and October collection dates (Table 1-5). The ^{90}Sr activity in water from well N2B exceeded the sample specific MDA in October (Table 1-5). Water from well UF-10a was below sample specific MDAs for both collection dates.
- The maximum ^{90}Sr activity for groundwater from well UF-2 was 361/16 pCi/l (activity/counting uncertainty) which is less than the 500 pCi/l limit imposed by 902 KAR 100:019 for controlled release of ^{90}Sr outside the boundary of a disposal trench.
- Cobalt-60 (^{60}Co) activity in groundwater was above sample specific MDAs in wells UE-2, UF-2, and UK1 for the April and October 2007 samples (Table 1-6). Well N2B cobalt-60 activity was above the MDA in the October 2007 sample (Table 1-6). Cobalt-60 activity in well UF-10a was below sample specific MDAs for both collection dates (Table 1-6).
- The ^{14}C activity was above sample specific MDAs in USGS monitoring wells UK-1, UF-2, UE-2, and N2B (Table 1-7). Carbon-14 activity in well UF-10a was below sample specific MDAs for both collection dates (Table 1-7).
- Cesium-137 activity in groundwater samples from USGS monitoring wells was below the REMS sample specific MDAs.

Summary of Extended Radionuclide Analyses

- Based on the historical and CY 2007 extended radionuclide analyses, radionuclides in groundwater continue to migrate away from the disposal trenches at elevated levels to the west and north/northwest corner of the Restricted Area.
- Radionuclide movement away from the disposal trenches is most likely controlled by: 1) The potentiometric gradient in the Lower Sandstone Marker Bed (LMB) which is radially away from the center of the Restricted Area; 2) The dip of the LMB which is radially away from the center of the Restricted Area; and 3) by the fracture orientation of the LMB.

TABLE 1-4a. USGS Monitoring Well Uranium and Plutonium Data APRIL 2007.

USGS Well	Activity in pCi/l			
	²³⁸ U/CU	²³⁴ U/CU	²³⁸ Pu/CU	²³⁹ Pu/CU
UE2	1.4/0.5	19.4/2.4	6.0/1.3	0.04/0.09
UF2	0.2/0.2	9.0/1.4	2.9/0.9	-0.05/0.2
UK1	0.2/0.2	4.7/1.0	2.4/0.8	0.1/0.02
N2B	0.1/0.5	0.6/0.4	1.1/0.6	-0.04/0.2
UF10a	1.4/0.5	2.9/0.7	0.2/0.4	0.09/0.1

Bold Italics = Reported Value Below MDA or a counting uncertainty of greater than 50%; NA = Not Analyzed; CU=Counting Uncertainty

TABLE 1-4b. USGS Monitoring Well Uranium and Plutonium Data October 2007.

USGS Well	Activity/CU in pCi/l			
	²³⁸ U/CU	²³⁴ U/CU	²³⁸ Pu/CU	²³⁹ Pu/CU
UE2	0.9/0.4	20.0/2.8	5.9/1.3	0.1/0.3
UF2	2.7/0.8	15.0/2.2	5.9/1.4	0.2/0.2
UK1	1.1/0.4	13.5/2.0	6.9/2.1	0.5/0.5
N2B	1.6/0.5	17.0/2.4	6.8/1.5	0.2/0.3
UF10a	5.9/1.1	15.2/2.3	1.1/0.5	0.02/0.3

Bold Italics = Reported Value Below MDA or a counting uncertainty of greater than 50%; NA = Not Analyzed; CU=Counting Uncertainty

TABLE 1-5. USGS Monitoring Well Strontium-90 Data April/October 2007.

USGS Well	⁹⁰ Sr Activity/CU in pCi/l	
	April	October
UE2	107/10	231/13
UF2	80/8	361/16
UK1	163/6	144/11
N2B	10/6	101/10
UF10a	8/10	5/6

Bold Italics = Reported Value Below MDA or a counting uncertainty of greater than 50%; NA = Not Analyzed; CU=Counting Uncertainty

TABLE 1-6. USGS Monitoring Well Cobalt-60 Data April/October 2007.

USGS Well	⁶⁰ Co Activity/CU in pCi/L	
	April	October
UE2	39/11	33/16
UF2	24/13	15/15
UK1	13/10	37/12
N2B	2/15	45/14
UF10a	16/10	7.4/9

Bold Italics = Reported Value Below MDA or a counting uncertainty of greater than 50%; NA = Not Analyzed; CU=Counting Uncertainty

Table 1-7. USGS Test Monitoring Well Carbon-14 data April/October 2007.

USGS Well	¹⁴ C Activity/CU in pCi/l	
	April	October
UE2	604/38	701/54
UF2	728/31	913/46
UK1	286/29	500/48
N2B	38/19	427/20
UF10a	40/32	36/29

Bold Italics = Reported Value Below MDA or a counting uncertainty of greater than 50%; NA = Not Analyzed; CU=Counting Uncertainty

- Extended radionuclide data indicates that Initial Remedial Phase remedial measures may not have been in place for sufficient time to impact the migration of radionuclides.
- The continued monitoring of radionuclides in groundwater is critical during the Interim Maintenance Period (IMP) because elevated levels of radionuclides continue migration toward the west hillside and north/northwest area of the MFNDS and the long-term potential for erosion to impact the discharge of groundwater to the surface resulting in increased radionuclide activity in surface water.

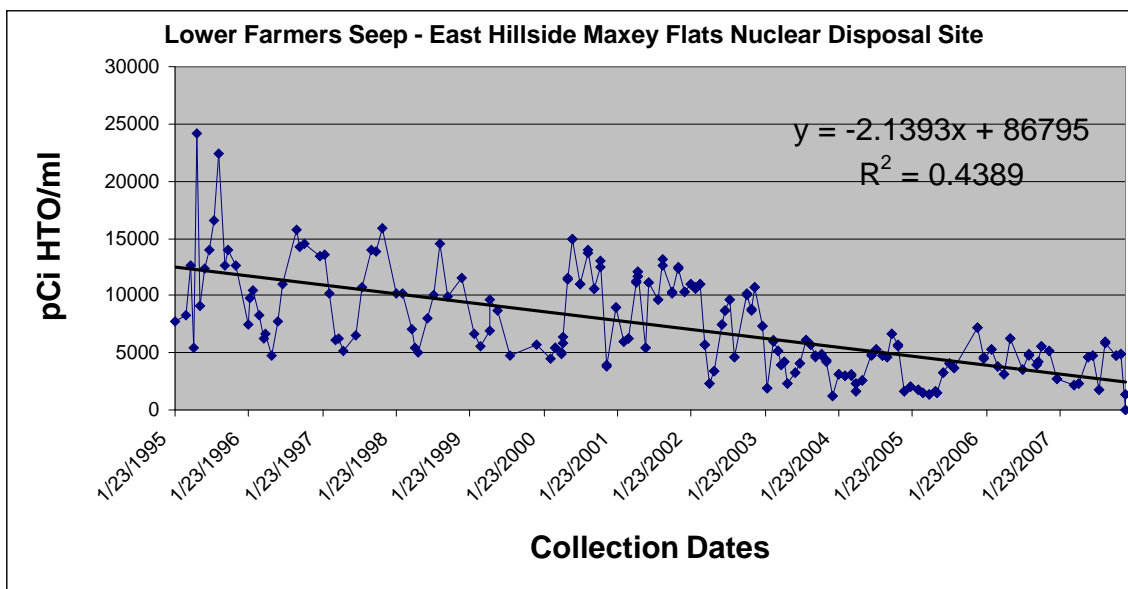
Regulatory & Public Health Assessment

Kentucky Administrative Regulation, 902 KAR 100:022, Section 18 requires that the annual dose at the site boundary of a low-level radioactive disposal site not exceed 25 mrem. Kentucky Administrative Regulation 902 KAR 100:015, Section 2 establishes releases be maintained "As Low As Reasonably Achievable" (ALARA). A primary focus of a radiation protection program is to maintain concentration/doses ALARA. The license for the MFNDS and other licenses issued in the Commonwealth of Kentucky for the handling and release of radioactive material are based on ALARA requirements in order to minimize radiation doses to workers and members of the public.

The HTO activities at East Main Drain Hillside seep locations inside the site boundary need to be compared to a limit of 1,000 pCi/ml imposed by 902 KAR 100:019, Section 44(7) for the controlled release of tritium outside the boundary of the trenches and the Restricted Area. HTO activity in CY 2005 at the lower farmers seep (LFS2) ranged from 1380 to 7170 pCi/ml with an average activity of 2810 pCi/ml. HTO activity in CY 2006 at LFS2 ranged from 3110 to 6290 pCi/ml with an average activity of 4570 pCi/ml. In CY 2007 HTO activity at LFS2 ranged from 1380 to 5920 pCi/ml with an average activity of 3530 pCi/ml. The LFS2 HTO activity exceeds the established release limit of 1,000 pCi/ml for HTO.

The chart below provides the trend line for the LFS2 HTO activity from 1995 through 2007. There is a downward trend in the HTO activity which is expected because the graph represents a time frame of 12 years, which corresponds to one HTO half-life (12.43 years). Based on the graph for HTO activity at the Lower Farmers Seep, it is not clear whether the Initial Remedial Phase has significantly impacted HTO activity at the Lower Farmers Seep on the East Main Drain hillside.

TABLE 1-8. LFS2 HTO activity trends from 1995 through 2007.



Surface water sample location 113 is in the East Main Drainage Channel and within the MFNDS old site-license boundary. CY 2007 mean HTO activity at ISCO EDRN was 135 pCi/ml which is 13.5% of the 1,000 pCi/ml limit in 902 KAR 100:019, Section 44(7) for the release of HTO outside the boundary of the trenches and the Restricted Area. CY 2006 EDRN mean HTO activity was 126 pCi/ml which and 12.6% of the release limit. CY 2005 ISCO EDRN mean HTO activity was 106 pCi/ml which is 10.6% of the release limit. The HTO activity remains elevated over the past six years at location 113. The table below provides the annual average HTO activity and the range of HTO activity in surface water at Location 113.

TABLE 1-9. HTO Activity in Water at Location 113 - East Drainage Channel

Year	Annual Average (pCi/ml)	Range	
		Lower (pCi/ml)	Upper (pCi/ml)
2007	135	0.2	535
2006	126	34	308
2005	106	58	290
2004	153	28	237
2003	84	10	258
2002	64	7	178

Surface water sampling location 144 is at the MFNDS old site license boundary in the East Main Drainage Channel. The average annual HTO activity for Location 144 was 52 pCi/ml during CY 2002, 60 pCi/ml during CY 2003, 90 pCi/ml in CY 2004, 50 pCi/ml in CY 2005, 54 pCi/ml in 2006, and 78 pCi/ml in 2007. This data along with the data for the Lower Farmers Seep and Location 113 indicates that it may require additional time for the Initial Remedial Phase to impact the level of HTO in the East Drainage Channel.

With the completion of the Initial Remedial Phase all surface water from the Initial Remedial Phase cap has been diverted to the East Main Drainage Channel. The increased discharge of surface water to the East Main Drainage Channel should be diluting the HTO activity. However, the HTO activity from 2002 to 2007 at location 113 (EDRN) and LFS2 indicate that the remedial activities may not have had time to fully impact HTO activity due to HTO releases to the East Main Drain hillside and drainage channel.

With the addition of the buffer zone acquired during the Initial Remedial Phase location 144 is no longer the point of compliance for comparison to the 25 mrem/yr dose standard in 902 KAR 100:022. However, radiation doses will continue to be calculated at location 144 in order to assess long-term statistical trends.

The dose assessment at location 144 for HTO assumes: 1) sufficient surface water is available at or one mile within the new site boundary; 2) a person resides at the location for 365 days a year; and 3) a person consumes 2 liters of water per day. Based on these hypothetical assumptions, a person consuming surface water at 78 pCi HTO/ml would receive an annual radiation dose from tritium of 3.6 millirem/year (mrem/yr). The hypothetical annual dose at location 144 would be 14.4.1% of the 25 mrem/yr dose limit for the site boundary established by 902 KAR 100:022, Section 18. The annual dose for tritium was calculated using the RESRAD-BASELINE computer code (ARGONNE NATIONAL LABORATORY).

The new site boundary requires calculation of the potential dose to a receptor at location 102. This location is immediately outside of the new site boundary on Rock Lick Creek. Samples were collected at location 102 with a sequential sampler. The average annual CY 2007 HTO activity at location 102 was 0.9 pCi/ml. Assuming surface water with an average HTO activity of 0.9 pCi/ml could be used as a drinking water source, an individual consuming 730 liters of water 365 days a year would receive an annual radiation dose of 0.04 mrem/yr from HTO. The annual radiation dose from HTO at location 102 is 0.16% of the 25 mrem/yr dose limit established by 902 KAR 100:022, Section 18

for the site boundary. The annual dose for tritium was calculated using the RESRAD-BASELINE computer code (ARGONNE NATIONAL LABORATORY).

The 3.6 mrem/year radiation dose from HTO for an individual drinking surface water at the old site boundary, location 144, in the East Main Drainage Channel, one mile upstream of the new site boundary, would result in a risk of 8.3×10^{-5} (from Risk/Dose Conversion Factors) and 1.2×10^{-4} (from Slope Factors). However, the East Main Drainage Channel is not a perennial stream and it is no longer the point of compliance. It is also unlikely that sufficient water would be present to provide 2.0 liters of drinking water for an individual 365 days per year. The level for cancer risk was calculated using the RESRAD-BASELINE computer code (ARGONNE NATIONAL LABORATORY).

The 0.04 mrem/year radiation dose from HTO for an individual drinking surface water at Rock Lick Creek location 102, outside of the new site boundary, would result in a risk of 9.5×10^{-7} (from Risk/Dose Conversion Factors) and 1.4×10^{-6} (from Slope Factors). The level for total cancer risk at location 102 was calculated using the RESRAD-BASELINE computer code (ARGONNE NATIONAL LABORATORY).

The release of elevated levels of HTO within the site boundary remains a significant long-term concern considering the potential for erosion on the east and west hillsides. Efforts were made during the Initial Remedial Phase to minimize both the release of radionuclides from the trenches and the potential for impacts by erosion of the hillslopes surrounding the disposal trenches. Analysis of CY 2007 data indicates the Initial Remedial Phase activities have not had a significant impact on the continuing release of tritium to the slopes surrounding the disposal trenches. Based on analysis of CY 2007 data, it is essential that sufficient monitoring be conducted to continue the evaluation of the effectiveness of the Initial Remedial Phase and to determine the potential for impacts on public health.

The International Commission on Radiation Protection (ICRP) proposed use of the effective dose (H_T) as a primary radiation protection standard and Annual Limit of Intake (ALI) as a secondary standard (ICRP Publication 30) for radiation protection. These limits have been adopted by the National Council on Radiation Protection and Measurements (NCRP, Report No. 91). NCRP Report No. 91 also recommends a Negligible Individual Risk Limit (NIRL) of 1 mrem/year. The NIRL is the level of average excess fatal health risk from radiation exposure from any individual source or practice below which further effort to reduce individual exposure is unwarranted.

In 2007 the Radiation Health Branch reduced sampling at grab sample locations surrounding the Maxey Flats Nuclear Disposal Site to once every other month. This action was supported by an assessment of the previous 11 years of data collected at the MFNDS by the RHB. It was determined ISCO samplers would provide sufficient samples and data for the assessment of continued releases of residual radioactive material on public health.

The REMS continues to maintain sufficient monitoring locations on the East Main Drain Hillside and in the East Main Drainage Channel to assess present and future impacts of contaminant movement to locations within the new site boundary and to locations outside of the new site boundary. Sampling frequency allows for remedial actions to be planned and implemented and to address increases in radionuclide activity if necessary. The REMS also has sufficient monitoring locations on the west hillside to continue to effectively monitor releases from the disposal trenches to Wash 107 and Drip Springs Creek.

Conclusions

On the basis of the data generated by the Radiation Health Branch, Department for Public Health, Cabinet for Health and Family Services during CY 2007, the MFNDS does not presently pose a threat to public health.

Analyses of water from monitoring wells, seeps, and surface water locations indicate that ex-filtration of leachate from the trenches continues to occur at the MFNDS. The activity of HTO and radionuclides in soil water, groundwater, and surface water at the perimeter of the Restricted Area have not been significantly reduced even though the Initial Remedial Phase of the Superfund remediation has been completed and certified by the U.S. Environmental Protection Agency. To fully appreciate the present evaluation of water infiltration/ex-filtration problems at MFNDS and the continuing release of radionuclides, it must be stressed that the existing evaluation of site conditions encompasses a snapshot in time compared to the 200 year duration of the remedial action and institutional control required by the Federal Court Ordered Consent Decree.

APPENDICES

APPENDIX 1. Surface Water Summary Data.

Mean HTO, Gross Alpha, Gross Beta Activity for 2007
in Off-Site Surface Water at the Maxey Flats Disposal Site

Location	Mean HTO (pCi/ml)	Mean Gross Beta Activity (pCi/liter)	Mean Gross Alpha Activity (pCi/liter)
101	-03	-0.7	2.1
102	0.9	-0.5	1.5
102QC	0.9	-0.7	-0.6
103	0.6	-0.4	2.0
143	0.1	-0.006	2.1
PDSKG	-0.01	2.9	4.5
106	5.4	-0.3	0.8
107	1.9	-0.2	1.2
N107	1.1	0.8	2.8
108	0.5	1.9	5.1
112	-0.0005	-0.6	1.2
113	181	1.0	2.5
144	78	-0.3	0.8
119	-0.003	0.6	2.1
121	0.02	-0.3	1.7
122	-0.03	-0.5	2.2
124	0.07	0.2	0.7
130	-0.004	0.2	2.1
132	0.2	-0.4	3.4
145	1.3	0.2	3.8
136	-0.004	0.6	5.8
142	0.4	5.2	5.2

Mean HTO Activity in Surface Water at Location 113 and East Pond Outlet

Location 113			East Pond Outlet		
Collection Date	pCi HTO/ml	CU	Collection Date	pCi HTO/ml	CU
1/10/07	129	0.8			
1/10/07	128	0.8			
4/3/07	234	1.1	4/3/07	0.5	0.1
4/3/07	237	1.1	4/3/07	0.4	0.1
5/21/07	407	1.3			
5/21/07	409	1.3			
6/14/07	358	1.3			
6/14/07	360	1.3			
7/2/07	203	0.9			
7/2/07	202	0.9			
8/7/07	51	0.5	8/7/07	1.6	0.1
8/7/07	50	0.5	8/7/07	1.5	0.1
9/6/07	70	.6			
9/6/07	71	0.6			
10/31/07	100	0.7			
10/31/07	104	0.7			
11/20/07	243	1.0			
11/20/07	245	1.0			
12/12/07	4	0.2			
12/12/07	4	0.2			

Mean tritiated Water (HTO), Beta and Alpha Activity in
Wash from South Drain of 33L at Maxey Flats Waste Disposal Site and Drip Springs Creek for 2007

Location	pCi HTO/mL	Beta Act. (pCi/l)	Alpha Act. (pCi/l)
NCW114	1.9	-0.2	2.3
SCW114	2.0	-0.7	2.8
NCW145	1.6	0.4	2.8

Mean tritiated Water (HTO), Beta and Alpha Activity in
Wash 7 at Maxey Flats Waste Disposal Site and Drip Springs Creek for 2007

Location	pCi HTO/mL	Beta Act. (pCi/l)	Alpha Act. (pCi/l)
J107	-0.04	-0.7	1.2
I107	0.06	1.1	1.4
H107	-0.01	-0.04	1.0
G107	18.7	-1.3	0.3
F107	15.7	-0.7	0.5
E107	14.6	-0.6	-0.7
D107	9.9	0.3	1.2
C107	12.0	-0.6	0.7
DRN107	6.9	-0.6	0.08
W7atRd	10.1	-0.6	1.7
B107	4.0	0.4	0.7

Mean tritiated Water (HTO), Beta and Alpha Activity in South Drainage Channel
For 2007 at the Bottom of the Farmers (BF143)

Collection Date	HTO (pCi/l)	CU	Beta Activity (pCi/l)	CU	Alpha Activity (pCi/l)	CU
1/10/07	0.01	0.1	-0.9	1.2	1.2	1.4
1/10/07	-0.03	0.1				
2/7/07	0.5	0.1				
2/7/07	0.1	0.1				
4/3/07	0.05	0.1	1.2	1.2	1.8	1.6
4/3/07	-0.2	0.1				

Mean tritiated Water (HTO), Beta and Alpha Activity
from Public Water Supply at Hillsboro, Kentucky for 2004

Location	pCi HTO/ml	Beta Activity (pCi/L)	Alpha Activity (pCi/L) West
Fleming Water District	-0.01	-0.5	-1.8

APPENDIX 2. Groundwater Summary Data

Tritiated Water (HTO) Mean Activity for 2007
in U-Wells at Maxey Flats Disposal Site

Location	Mean pCi HTO/mL
UE-2	339000
UK-1	227000
N2B	151000
UF2	208000
UF10a	36700

APPENDIX 3. ISCO Surface-water Data

Data Qualifiers for ISCO Surface-water Data

“=” – Validated Laboratory Result

“U” – Reported Value Below Minimum Detectable Concentration or Error > 50% of Reported Value

“R” – Results Rejected because Relative Percent Difference between duplicate samples is > 15%

CU = Counting Uncertainty

ISCO 102 HTO Activity for 2007

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
1/1/2007	HTO	0.66	0.11	0.32	=
1/1/2007	HTO	0.70	0.11	0.32	=
1/2/2007	HTO	0.67	0.11	0.32	=
1/2/2007	HTO	0.82	0.11	0.32	=
1/3/2007	HTO	0.89	0.12	0.32	=
1/3/2007	HTO	0.97	0.12	0.32	=
1/4/2007	HTO	0.57	0.11	0.32	=
1/4/2007	HTO	0.58	0.11	0.32	=
1/5/2007	HTO	0.70	0.11	0.32	=
1/5/2007	HTO	0.80	0.11	0.32	=
1/6/2007	HTO	0.68	0.11	0.32	=
1/6/2007	HTO	0.73	0.11	0.32	=
1/7/2007	HTO	0.54	0.11	0.32	=
1/7/2007	HTO	0.67	0.11	0.32	=
1/8/2007	HTO	1.78	0.13	0.32	=
1/8/2007	HTO	1.79	0.13	0.32	=
1/9/2007	HTO	0.99	0.12	0.32	=
1/9/2007	HTO	1.10	0.12	0.32	=
1/10/2007	HTO	0.47	0.11	0.32	=
1/10/2007	HTO	0.52	0.11	0.32	=
1/11/2007	HTO	0.60	0.11	0.32	=
1/11/2007	HTO	0.78	0.11	0.32	=
1/12/2007	HTO	0.74	0.12	0.34	=
1/12/2007	HTO	0.91	0.12	0.34	=
1/13/2007	HTO	0.37	0.11	0.32	=
1/13/2007	HTO	0.49	0.11	0.32	=
1/14/2007	HTO	0.67	0.12	0.34	=
1/14/2007	HTO	0.69	0.12	0.34	=
1/15/2007	HTO	0.86	0.12	0.32	=
1/15/2007	HTO	0.96	0.12	0.34	=
1/15/2007	HTO	0.98	0.12	0.34	=
1/15/2007	HTO	1.24	0.12	0.32	=
1/16/2007	HTO	0.67	0.11	0.32	=
1/16/2007	HTO	0.77	0.11	0.32	=
1/17/2007	HTO	0.70	0.11	0.32	=
1/17/2007	HTO	0.85	0.12	0.32	=
1/22/2007	HTO	0.58	0.11	0.31	=
1/22/2007	HTO	0.79	0.11	0.31	=
1/23/2007	HTO	0.61	0.11	0.31	=
1/23/2007	HTO	0.69	0.11	0.31	=
1/24/2007	HTO	0.57	0.10	0.30	=
1/24/2007	HTO	0.59	0.10	0.30	=
1/25/2007	HTO	0.63	0.11	0.31	=
1/25/2007	HTO	0.85	0.11	0.31	=
1/26/2007	HTO	0.71	0.11	0.31	=
1/26/2007	HTO	0.73	0.11	0.31	=
1/27/2007	HTO	0.58	0.11	0.31	=
1/27/2007	HTO	0.73	0.11	0.31	=
1/28/2007	HTO	0.68	0.11	0.31	=
1/28/2007	HTO	0.87	0.11	0.31	=
1/29/2007	HTO	0.80	0.11	0.31	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
1/29/2007	HTO	0.98	0.11	0.31	=
1/30/2007	HTO	0.50	0.10	0.31	=
1/30/2007	HTO	0.60	0.11	0.31	=
1/31/2007	HTO	0.84	0.11	0.31	=
1/31/2007	HTO	1.07	0.12	0.31	=
2/1/2007	HTO	1.27	0.12	0.31	=
2/1/2007	HTO	1.38	0.12	0.31	=
2/2/2007	HTO	0.65	0.11	0.31	=
2/2/2007	HTO	0.78	0.11	0.31	=
2/3/2007	HTO	0.50	0.10	0.31	=
2/3/2007	HTO	0.53	0.10	0.31	=
2/4/2007	HTO	0.34	0.10	0.31	=
2/4/2007	HTO	0.35	0.10	0.31	=
2/5/2007	HTO	0.54	0.11	0.31	=
2/5/2007	HTO	0.69	0.11	0.31	=
2/17/2007	HTO	0.88	0.12	0.32	=
2/17/2007	HTO	1.05	0.12	0.32	=
2/18/2007	HTO	0.78	0.11	0.32	=
2/18/2007	HTO	0.79	0.11	0.32	=
2/19/2007	HTO	0.65	0.11	0.32	=
2/19/2007	HTO	0.90	0.12	0.32	=
3/3/2007	HTO	0.59	0.12	0.34	=
3/3/2007	HTO	0.77	0.12	0.34	=
3/4/2007	HTO	0.67	0.12	0.34	=
3/4/2007	HTO	0.69	0.12	0.34	=
3/5/2007	HTO	0.46	0.11	0.34	=
3/5/2007	HTO	1.11	0.13	0.34	=
3/23/2007	HTO	1.00	0.12	0.33	=
3/23/2007	HTO	1.01	0.12	0.33	=
3/24/2007	HTO	1.25	0.12	0.31	=
3/24/2007	HTO	1.29	0.12	0.31	=
3/25/2007	HTO	0.64	0.11	0.31	=
3/25/2007	HTO	0.71	0.11	0.31	=
3/26/2007	HTO	0.74	0.11	0.31	=
3/26/2007	HTO	0.87	0.11	0.31	=
3/27/2007	HTO	0.63	0.11	0.31	=
3/27/2007	HTO	0.67	0.11	0.31	=
3/28/2007	HTO	0.86	0.11	0.31	=
3/28/2007	HTO	0.87	0.11	0.31	=
3/29/2007	HTO	2.03	0.13	0.31	=
3/29/2007	HTO	2.17	0.14	0.31	=
3/30/2007	HTO	0.73	0.11	0.31	=
3/30/2007	HTO	0.81	0.11	0.31	=
3/31/2007	HTO	0.98	0.12	0.31	=
3/31/2007	HTO	1.00	0.12	0.31	=
4/1/2007	HTO	1.68	0.13	0.31	=
4/1/2007	HTO	1.79	0.13	0.31	=
4/2/2007	HTO	1.47	0.12	0.31	=
4/2/2007	HTO	1.61	0.13	0.31	=
4/3/2007	HTO	0.65	0.11	0.31	=
4/3/2007	HTO	0.77	0.11	0.31	=
4/4/2007	HTO	0.81	0.11	0.31	=
4/4/2007	HTO	0.87	0.11	0.31	=
4/5/2007	HTO	1.00	0.12	0.31	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
4/5/2007	HTO	1.25	0.12	0.31	=
4/6/2007	HTO	2.16	0.14	0.31	=
4/6/2007	HTO	2.21	0.14	0.31	=
4/7/2007	HTO	0.64	0.11	0.31	=
4/7/2007	HTO	0.69	0.11	0.31	=
4/8/2007	HTO	0.66	0.11	0.31	=
4/8/2007	HTO	0.83	0.11	0.31	=
4/9/2007	HTO	0.96	0.11	0.31	=
4/9/2007	HTO	1.14	0.12	0.31	=
4/10/2007	HTO	0.91	0.11	0.31	=
4/10/2007	HTO	1.04	0.12	0.31	=
4/11/2007	HTO	0.87	0.12	0.33	=
4/11/2007	HTO	0.93	0.12	0.33	=
4/12/2007	HTO	3.08	0.16	0.33	=
4/12/2007	HTO	3.14	0.16	0.33	=
4/13/2007	HTO	2.56	0.15	0.33	=
4/13/2007	HTO	2.67	0.15	0.33	=
4/14/2007	HTO	0.93	0.12	0.33	=
4/14/2007	HTO	1.06	0.12	0.33	=
4/15/2007	HTO	0.57	0.11	0.33	=
4/15/2007	HTO	0.64	0.11	0.33	=
4/16/2007	HTO	0.82	0.12	0.33	=
4/16/2007	HTO	1.03	0.12	0.33	=
4/17/2007	HTO	0.89	0.12	0.33	=
4/17/2007	HTO	0.93	0.12	0.33	=
4/18/2007	HTO	0.91	0.12	0.33	=
4/18/2007	HTO	1.11	0.12	0.33	=
4/19/2007	HTO	0.96	0.12	0.33	=
4/19/2007	HTO	1.04	0.12	0.33	=
4/20/2007	HTO	0.83	0.12	0.33	=
4/20/2007	HTO	0.85	0.12	0.33	=
4/21/2007	HTO	0.74	0.12	0.33	=
4/21/2007	HTO	0.92	0.12	0.33	=
4/22/2007	HTO	0.83	0.12	0.33	=
4/22/2007	HTO	1.00	0.12	0.33	=
4/23/2007	HTO	0.72	0.12	0.33	=
4/23/2007	HTO	0.91	0.12	0.33	=
4/24/2007	HTO	0.67	0.11	0.32	=
4/24/2007	HTO	0.81	0.11	0.32	=
4/25/2007	HTO	1.71	0.14	0.33	=
4/25/2007	HTO	1.74	0.14	0.33	=
4/26/2007	HTO	1.87	0.14	0.33	=
4/26/2007	HTO	1.90	0.14	0.33	=
4/27/2007	HTO	1.97	0.14	0.33	=
4/27/2007	HTO	2.33	0.15	0.33	=
4/28/2007	HTO	1.40	0.13	0.33	=
4/28/2007	HTO	1.76	0.14	0.33	=
4/29/2007	HTO	1.83	0.14	0.33	=
4/29/2007	HTO	1.95	0.14	0.33	=
4/30/2007	HTO	1.81	0.14	0.33	=
4/30/2007	HTO	1.92	0.14	0.33	=
5/1/2007	HTO	1.02	0.12	0.33	=
5/1/2007	HTO	1.16	0.12	0.33	=
5/2/2007	HTO	0.73	0.12	0.33	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
5/2/2007	HTO	0.96	0.12	0.33	=
5/3/2007	HTO	1.73	0.13	0.33	=
5/3/2007	HTO	1.79	0.13	0.33	=
5/4/2007	HTO	2.41	0.14	0.33	=
5/4/2007	HTO	2.45	0.15	0.33	=
5/5/2007	HTO	1.50	0.13	0.33	=
5/5/2007	HTO	1.55	0.13	0.33	=
5/6/2007	HTO	1.74	0.13	0.33	=
5/6/2007	HTO	1.76	0.13	0.33	=
5/7/2007	HTO	2.10	0.14	0.33	=
5/7/2007	HTO	2.36	0.14	0.33	=
5/8/2007	HTO	1.23	0.12	0.33	=
5/8/2007	HTO	1.27	0.13	0.33	=
5/9/2007	HTO	0.95	0.12	0.33	=
5/9/2007	HTO	1.08	0.12	0.33	=
5/10/2007	HTO	0.95	0.12	0.33	=
5/10/2007	HTO	1.11	0.12	0.33	=
5/11/2007	HTO	0.77	0.12	0.33	=
5/11/2007	HTO	0.95	0.12	0.33	=
5/12/2007	HTO	0.67	0.11	0.33	=
5/12/2007	HTO	0.68	0.11	0.33	=
5/13/2007	HTO	0.74	0.12	0.33	=
5/13/2007	HTO	0.83	0.12	0.33	=
5/14/2007	HTO	0.65	0.11	0.33	=
5/14/2007	HTO	0.74	0.12	0.33	=
5/15/2007	HTO	0.56	0.11	0.33	=
5/15/2007	HTO	0.59	0.11	0.33	=
5/16/2007	HTO	1.44	0.13	0.33	=
5/16/2007	HTO	1.50	0.13	0.33	=
5/18/2007	HTO	1.54	0.13	0.33	=
5/18/2007	HTO	1.58	0.13	0.33	=
6/13/2007	HTO	1.52	0.13	0.32	=
6/13/2007	HTO	1.55	0.13	0.32	=
6/14/2007	HTO	1.31	0.13	0.32	=
6/14/2007	HTO	1.38	0.13	0.32	=
6/15/2007	HTO	1.20	0.12	0.32	=
6/15/2007	HTO	1.27	0.12	0.32	=
6/16/2007	HTO	1.25	0.12	0.32	=
6/16/2007	HTO	1.28	0.12	0.32	=
6/17/2007	HTO	1.12	0.12	0.32	=
6/17/2007	HTO	1.17	0.12	0.32	=
6/18/2007	HTO	1.07	0.12	0.32	=
6/18/2007	HTO	1.15	0.12	0.32	=
6/19/2007	HTO	0.96	0.12	0.32	=
6/19/2007	HTO	1.16	0.12	0.32	=
6/20/2007	HTO	1.02	0.12	0.32	=
6/20/2007	HTO	1.23	0.12	0.32	=
6/21/2007	HTO	1.05	0.12	0.32	=
6/21/2007	HTO	1.31	0.13	0.32	=
6/22/2007	HTO	1.26	0.12	0.32	=
6/22/2007	HTO	1.31	0.13	0.32	=
6/23/2007	HTO	0.98	0.12	0.32	=
6/23/2007	HTO	1.05	0.12	0.32	=
6/24/2007	HTO	1.14	0.12	0.32	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
6/24/2007	HTO	1.25	0.12	0.32	=
6/25/2007	HTO	1.08	0.12	0.32	=
6/25/2007	HTO	1.17	0.12	0.32	=
6/26/2007	HTO	1.16	0.12	0.32	=
6/26/2007	HTO	1.28	0.12	0.32	=
6/27/2007	HTO	1.17	0.12	0.32	=
6/27/2007	HTO	1.22	0.12	0.32	=
6/28/2007	HTO	1.47	0.13	0.32	=
6/28/2007	HTO	1.48	0.13	0.32	=
6/29/2007	HTO	0.88	0.12	0.32	=
6/29/2007	HTO	0.94	0.12	0.32	=
6/30/2007	HTO	0.81	0.12	0.32	=
6/30/2007	HTO	0.90	0.12	0.32	=
7/1/2007	HTO	0.68	0.11	0.32	=
7/1/2007	HTO	0.77	0.11	0.32	=
7/2/2007	HTO	0.70	0.11	0.32	=
7/2/2007	HTO	0.91	0.12	0.32	=
7/3/2007	HTO	0.74	0.11	0.32	=
7/3/2007	HTO	0.75	0.11	0.32	=
7/4/2007	HTO	0.72	0.11	0.32	=
7/4/2007	HTO	0.73	0.11	0.32	=
7/5/2007	HTO	0.82	0.11	0.32	=
7/5/2007	HTO	0.86	0.11	0.32	=
7/6/2007	HTO	0.43	0.11	0.32	=
7/6/2007	HTO	0.49	0.11	0.32	=
7/7/2007	HTO	0.51	0.11	0.32	=
7/7/2007	HTO	0.53	0.11	0.32	=
7/8/2007	HTO	0.53	0.11	0.32	=
7/8/2007	HTO	0.63	0.11	0.32	=
7/9/2007	HTO	0.57	0.11	0.32	=
7/9/2007	HTO	0.63	0.11	0.32	=
7/10/2007	HTO	0.50	0.11	0.32	=
7/10/2007	HTO	0.54	0.11	0.32	=
7/11/2007	HTO	0.56	0.11	0.32	=
7/11/2007	HTO	0.58	0.11	0.32	=
7/12/2007	HTO	0.63	0.11	0.32	=
7/12/2007	HTO	0.71	0.11	0.32	=
7/13/2007	HTO	0.53	0.11	0.32	=
7/13/2007	HTO	0.66	0.11	0.32	=
7/14/2007	HTO	0.53	0.11	0.32	=
7/14/2007	HTO	0.55	0.11	0.32	=
7/15/2007	HTO	0.54	0.11	0.32	=
7/15/2007	HTO	0.58	0.11	0.32	=
7/16/2007	HTO	0.55	0.11	0.32	=
7/16/2007	HTO	0.67	0.11	0.32	=
7/17/2007	HTO	0.44	0.11	0.32	=
7/17/2007	HTO	0.51	0.11	0.32	=
7/18/2007	HTO	0.60	0.11	0.32	=
7/18/2007	HTO	0.69	0.11	0.32	=
7/19/2007	HTO	0.78	0.11	0.32	=
7/19/2007	HTO	0.84	0.11	0.32	=
7/20/2007	HTO	0.61	0.11	0.32	=
7/20/2007	HTO	0.63	0.11	0.32	=
7/21/2007	HTO	0.57	0.11	0.32	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
7/21/2007	HTO	0.79	0.11	0.32	=
7/22/2007	HTO	0.59	0.11	0.32	=
7/22/2007	HTO	0.82	0.11	0.32	=
7/23/2007	HTO	0.70	0.11	0.31	=
7/23/2007	HTO	0.70	0.11	0.31	=
7/24/2007	HTO	0.62	0.11	0.32	=
7/24/2007	HTO	0.69	0.11	0.32	=
7/25/2007	HTO	0.64	0.11	0.30	=
7/25/2007	HTO	0.79	0.11	0.30	=
7/26/2007	HTO	0.73	0.11	0.30	=
7/26/2007	HTO	0.74	0.11	0.30	=
7/27/2007	HTO	0.82	0.11	0.30	=
7/27/2007	HTO	0.88	0.11	0.30	=
7/28/2007	HTO	1.50	0.12	0.30	=
7/28/2007	HTO	1.66	0.12	0.30	=
7/29/2007	HTO	0.66	0.11	0.30	=
7/29/2007	HTO	0.85	0.11	0.30	=
7/30/2007	HTO	0.78	0.11	0.30	=
7/30/2007	HTO	0.97	0.11	0.30	=
7/31/2007	HTO	1.34	0.12	0.30	=
7/31/2007	HTO	1.48	0.12	0.30	=
8/1/2007	HTO	1.40	0.12	0.30	=
8/1/2007	HTO	1.55	0.12	0.30	=
8/2/2007	HTO	1.55	0.12	0.30	=
8/2/2007	HTO	1.69	0.13	0.30	=
8/3/2007	HTO	1.33	0.12	0.30	=
8/3/2007	HTO	1.40	0.12	0.30	=
8/4/2007	HTO	1.23	0.12	0.30	=
8/5/2007	HTO	1.16	0.12	0.30	=
8/5/2007	HTO	1.22	0.12	0.30	=
8/6/2007	HTO	0.85	0.11	0.30	=
8/6/2007	HTO	0.96	0.11	0.30	=
8/7/2007	HTO	1.15	0.12	0.30	=
8/7/2007	HTO	1.16	0.12	0.30	=
8/8/2007	HTO	1.14	0.12	0.30	=
8/8/2007	HTO	1.16	0.12	0.30	=
8/9/2007	HTO	1.13	0.12	0.30	=
8/9/2007	HTO	1.14	0.12	0.30	=
8/10/2007	HTO	0.65	0.11	0.30	=
8/10/2007	HTO	0.69	0.11	0.30	=
8/11/2007	HTO	1.08	0.11	0.30	=
8/11/2007	HTO	1.36	0.12	0.30	=
8/12/2007	HTO	1.00	0.11	0.30	=
8/12/2007	HTO	1.00	0.11	0.30	=
8/13/2007	HTO	0.79	0.11	0.30	=
8/13/2007	HTO	0.80	0.11	0.30	=
8/14/2007	HTO	1.01	0.12	0.32	=
8/14/2007	HTO	1.16	0.12	0.32	=
8/15/2007	HTO	0.96	0.12	0.31	=
8/15/2007	HTO	1.04	0.12	0.31	=
8/16/2007	HTO	1.07	0.12	0.31	=
8/16/2007	HTO	1.16	0.12	0.31	=
8/17/2007	HTO	0.91	0.12	0.32	=
8/17/2007	HTO	1.05	0.12	0.32	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
8/18/2007	HTO	0.98	0.12	0.31	=
8/18/2007	HTO	1.08	0.12	0.31	=
8/19/2007	HTO	0.82	0.11	0.31	=
8/19/2007	HTO	0.90	0.11	0.31	=
8/20/2007	HTO	0.92	0.12	0.31	=
8/21/2007	HTO	0.98	0.12	0.31	=
8/21/2007	HTO	0.99	0.12	0.31	=
8/22/2007	HTO	1.06	0.12	0.31	=
8/22/2007	HTO	1.31	0.12	0.31	=
8/23/2007	HTO	1.68	0.13	0.31	=
8/23/2007	HTO	1.74	0.13	0.31	=
8/24/2007	HTO	1.75	0.13	0.31	=
8/24/2007	HTO	1.84	0.13	0.31	=
8/25/2007	HTO	1.56	0.13	0.31	=
8/25/2007	HTO	1.70	0.13	0.31	=
8/26/2007	HTO	1.56	0.13	0.31	=
8/26/2007	HTO	1.72	0.13	0.31	=
8/27/2007	HTO	1.66	0.13	0.31	=
8/27/2007	HTO	1.71	0.13	0.31	=
8/28/2007	HTO	1.36	0.12	0.31	=
8/28/2007	HTO	1.46	0.13	0.31	=
8/29/2007	HTO	1.48	0.13	0.31	=
8/29/2007	HTO	1.62	0.13	0.31	=
8/30/2007	HTO	1.49	0.13	0.31	=
8/30/2007	HTO	1.50	0.13	0.31	=
8/31/2007	HTO	1.32	0.12	0.31	=
8/31/2007	HTO	1.51	0.13	0.31	=
9/1/2007	HTO	1.20	0.12	0.32	=
9/1/2007	HTO	1.45	0.13	0.32	=
9/2/2007	HTO	1.22	0.12	0.31	=
9/2/2007	HTO	1.48	0.13	0.31	=
9/3/2007	HTO	1.34	0.12	0.31	=
9/3/2007	HTO	1.47	0.13	0.31	=
9/4/2007	HTO	1.20	0.12	0.31	=
9/4/2007	HTO	1.25	0.12	0.31	=
9/5/2007	HTO	1.22	0.12	0.31	=
9/5/2007	HTO	1.39	0.12	0.31	=
9/6/2007	HTO	1.25	0.12	0.31	=
9/6/2007	HTO	1.30	0.12	0.31	=
9/7/2007	HTO	1.05	0.12	0.31	=
9/7/2007	HTO	1.22	0.12	0.31	=
9/8/2007	HTO	1.12	0.12	0.32	=
9/10/2007	HTO	0.77	0.11	0.31	=
9/10/2007	HTO	0.92	0.12	0.31	=
9/11/2007	HTO	0.40	0.10	0.31	=
9/11/2007	HTO	0.41	0.10	0.31	=
9/12/2007	HTO	0.40	0.10	0.31	=
9/12/2007	HTO	0.40	0.10	0.31	=
9/13/2007	HTO	0.40	0.10	0.31	=
9/13/2007	HTO	0.49	0.11	0.31	=
9/14/2007	HTO	0.32	0.10	0.31	=
9/14/2007	HTO	0.53	0.11	0.31	=
9/15/2007	HTO	0.41	0.10	0.31	=
9/15/2007	HTO	0.54	0.11	0.31	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
9/16/2007	HTO	0.46	0.11	0.31	=
9/16/2007	HTO	0.46	0.11	0.31	=
9/17/2007	HTO	0.35	0.10	0.31	=
9/17/2007	HTO	0.39	0.10	0.31	=
9/18/2007	HTO	0.26	0.10	0.31	U
9/18/2007	HTO	0.48	0.11	0.31	=
9/19/2007	HTO	0.34	0.10	0.31	=
9/19/2007	HTO	0.40	0.10	0.31	=
9/20/2007	HTO	0.43	0.11	0.31	=
9/20/2007	HTO	0.43	0.11	0.31	=
9/21/2007	HTO	0.29	0.10	0.31	U
9/21/2007	HTO	0.33	0.10	0.31	=
9/22/2007	HTO	0.33	0.10	0.31	=
9/22/2007	HTO	0.35	0.10	0.31	=
9/23/2007	HTO	0.36	0.10	0.31	=
9/23/2007	HTO	0.42	0.10	0.31	=
9/24/2007	HTO	0.29	0.10	0.31	U
9/24/2007	HTO	0.31	0.10	0.31	U
9/25/2007	HTO	0.40	0.10	0.31	=
9/25/2007	HTO	0.42	0.10	0.31	=
9/26/2007	HTO	0.42	0.10	0.31	=
9/26/2007	HTO	0.52	0.11	0.31	=
9/27/2007	HTO	0.43	0.10	0.31	=
9/27/2007	HTO	0.46	0.10	0.31	=
9/28/2007	HTO	0.41	0.10	0.31	=
9/28/2007	HTO	0.45	0.10	0.31	=
9/29/2007	HTO	0.46	0.10	0.31	=
9/29/2007	HTO	0.47	0.10	0.31	=
9/30/2007	HTO	0.30	0.10	0.31	U
9/30/2007	HTO	0.31	0.10	0.31	U
10/1/2007	HTO	0.33	0.10	0.31	=
10/1/2007	HTO	0.44	0.10	0.31	=
10/2/2007	HTO	0.29	0.10	0.31	U
10/2/2007	HTO	0.44	0.10	0.31	=
10/3/2007	HTO	0.34	0.10	0.31	=
10/3/2007	HTO	0.38	0.10	0.31	=
10/4/2007	HTO	0.31	0.10	0.31	U
10/4/2007	HTO	0.51	0.11	0.31	=
10/5/2007	HTO	0.38	0.10	0.31	=
10/5/2007	HTO	0.42	0.10	0.31	=
10/6/2007	HTO	0.41	0.10	0.31	=
10/6/2007	HTO	0.45	0.10	0.31	=
10/7/2007	HTO	0.36	0.10	0.31	=
10/7/2007	HTO	0.47	0.10	0.31	=
10/8/2007	HTO	0.38	0.10	0.31	=
10/8/2007	HTO	0.47	0.10	0.31	=
10/9/2007	HTO	0.24	0.10	0.31	U
10/9/2007	HTO	0.48	0.10	0.31	=
10/10/2007	HTO	0.36	0.10	0.31	=
10/10/2007	HTO	0.45	0.10	0.31	=
10/11/2007	HTO	0.18	0.10	0.31	U
10/11/2007	HTO	0.37	0.10	0.31	=
10/12/2007	HTO	0.30	0.10	0.31	U
10/12/2007	HTO	0.32	0.10	0.31	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
10/13/2007	HTO	0.28	0.10	0.31	U
10/13/2007	HTO	0.33	0.10	0.31	=
10/14/2007	HTO	0.10	0.10	0.31	U
10/14/2007	HTO	0.13	0.10	0.31	U
10/15/2007	HTO	0.16	0.10	0.31	U
10/15/2007	HTO	0.50	0.10	0.31	=
10/16/2007	HTO	0.33	0.10	0.32	=
10/16/2007	HTO	0.37	0.10	0.32	=
10/17/2007	HTO	0.35	0.10	0.32	=
10/17/2007	HTO	0.38	0.10	0.32	=
10/18/2007	HTO	0.21	0.10	0.32	U
10/18/2007	HTO	0.27	0.10	0.32	U
10/19/2007	HTO	0.34	0.10	0.32	=
10/19/2007	HTO	0.40	0.10	0.32	=
10/20/2007	HTO	0.60	0.11	0.32	=
10/20/2007	HTO	0.79	0.11	0.32	=
10/21/2007	HTO	0.75	0.11	0.32	=
10/21/2007	HTO	0.76	0.11	0.32	=
10/22/2007	HTO	0.59	0.11	0.32	=
10/22/2007	HTO	0.82	0.11	0.32	=
10/23/2007	HTO	0.64	0.11	0.32	=
10/23/2007	HTO	0.69	0.11	0.32	=
10/24/2007	HTO	0.13	0.10	0.32	U
10/24/2007	HTO	0.39	0.10	0.32	=
10/25/2007	HTO	0.25	0.10	0.32	U
10/25/2007	HTO	0.42	0.11	0.32	=
10/26/2007	HTO	0.15	0.10	0.32	U
10/26/2007	HTO	0.15	0.10	0.32	U
10/27/2007	HTO	0.30	0.10	0.32	U
10/27/2007	HTO	0.37	0.10	0.32	=
10/28/2007	HTO	0.23	0.10	0.32	U
10/28/2007	HTO	0.35	0.10	0.32	=
10/29/2007	HTO	0.19	0.10	0.32	U
10/29/2007	HTO	0.21	0.10	0.32	U
10/30/2007	HTO	0.27	0.10	0.32	U
10/30/2007	HTO	0.40	0.10	0.32	=
10/31/2007	HTO	0.29	0.10	0.32	U
10/31/2007	HTO	0.37	0.10	0.32	=
11/1/2007	HTO	0.30	0.10	0.32	U
11/1/2007	HTO	0.47	0.11	0.32	=
11/2/2007	HTO	0.30	0.10	0.32	U
11/2/2007	HTO	0.47	0.11	0.32	=
11/3/2007	HTO	0.16	0.10	0.32	U
11/3/2007	HTO	0.23	0.10	0.32	U
11/4/2007	HTO	0.16	0.10	0.32	U
11/4/2007	HTO	0.51	0.11	0.32	=
11/5/2007	HTO	0.21	0.10	0.32	U
11/5/2007	HTO	0.29	0.10	0.32	U
11/6/2007	HTO	0.22	0.10	0.32	U
11/6/2007	HTO	0.40	0.10	0.32	=
11/7/2007	HTO	0.34	0.10	0.32	=
11/7/2007	HTO	0.39	0.10	0.32	=
11/8/2007	HTO	0.48	0.11	0.32	=
11/8/2007	HTO	0.51	0.11	0.32	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
11/9/2007	HTO	0.54	0.11	0.32	=
11/9/2007	HTO	0.63	0.11	0.32	=
11/10/2007	HTO	0.41	0.10	0.32	=
11/10/2007	HTO	0.43	0.10	0.32	=
11/11/2007	HTO	0.40	0.10	0.32	=
11/11/2007	HTO	0.46	0.11	0.32	=
11/12/2007	HTO	0.40	0.10	0.32	=
11/12/2007	HTO	0.48	0.11	0.32	=
11/13/2007	HTO	0.65	0.11	0.32	=
11/13/2007	HTO	0.86	0.11	0.32	=
11/14/2007	HTO	1.36	0.12	0.32	=
11/14/2007	HTO	1.43	0.12	0.32	=
11/15/2007	HTO	0.95	0.11	0.32	=
11/15/2007	HTO	1.17	0.12	0.32	=
11/16/2007	HTO	1.32	0.12	0.32	=
11/16/2007	HTO	1.50	0.12	0.32	=
11/17/2007	HTO	1.52	0.12	0.32	=
11/17/2007	HTO	1.67	0.13	0.32	=
11/18/2007	HTO	1.47	0.12	0.32	=
11/18/2007	HTO	1.80	0.13	0.32	=
11/19/2007	HTO	1.39	0.12	0.32	=
11/19/2007	HTO	1.44	0.12	0.32	=
11/20/2007	HTO	1.02	0.12	0.32	=
11/20/2007	HTO	1.05	0.12	0.32	=
11/21/2007	HTO	0.98	0.11	0.31	=
11/21/2007	HTO	1.20	0.12	0.31	=
11/22/2007	HTO	1.07	0.12	0.31	=
11/22/2007	HTO	1.21	0.12	0.31	=
11/23/2007	HTO	0.88	0.11	0.31	=
11/23/2007	HTO	0.98	0.11	0.31	=
11/24/2007	HTO	0.95	0.11	0.31	=
11/24/2007	HTO	1.07	0.12	0.31	=
11/25/2007	HTO	0.90	0.11	0.31	=
11/25/2007	HTO	0.99	0.11	0.31	=
11/26/2007	HTO	1.00	0.11	0.31	=
11/26/2007	HTO	1.00	0.11	0.31	=
11/27/2007	HTO	0.73	0.11	0.31	=
11/27/2007	HTO	0.80	0.11	0.31	=
11/28/2007	HTO	0.55	0.11	0.31	=
11/28/2007	HTO	0.65	0.11	0.31	=
11/29/2007	HTO	0.51	0.11	0.31	=
11/29/2007	HTO	0.62	0.11	0.31	=
11/30/2007	HTO	0.53	0.11	0.31	=
11/30/2007	HTO	0.67	0.11	0.31	=
12/1/2007	HTO	0.49	0.10	0.31	=
12/1/2007	HTO	0.63	0.11	0.31	=
12/2/2007	HTO	0.50	0.10	0.31	=
12/2/2007	HTO	0.50	0.11	0.31	=
12/3/2007	HTO	0.76	0.11	0.31	=
12/3/2007	HTO	0.82	0.11	0.31	=
12/4/2007	HTO	0.54	0.11	0.31	=
12/4/2007	HTO	0.69	0.11	0.31	=
12/5/2007	HTO	0.42	0.10	0.31	=
12/5/2007	HTO	0.43	0.10	0.31	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
12/6/2007	HTO	0.95	0.11	0.31	=
12/6/2007	HTO	1.12	0.12	0.31	=
12/7/2007	HTO	1.14	0.12	0.31	=
12/7/2007	HTO	1.21	0.12	0.31	=
12/8/2007	HTO	0.71	0.11	0.31	=
12/8/2007	HTO	0.74	0.11	0.31	=
12/9/2007	HTO	1.42	0.12	0.31	=
12/9/2007	HTO	1.65	0.13	0.31	=
12/10/2007	HTO	0.33	0.10	0.31	=
12/10/2007	HTO	0.48	0.10	0.31	=
12/11/2007	HTO	0.37	0.10	0.31	=
12/11/2007	HTO	0.55	0.11	0.31	=
12/12/2007	HTO	0.28	0.10	0.31	U
12/12/2007	HTO	0.30	0.10	0.31	U
12/13/2007	HTO	0.42	0.10	0.29	=
12/13/2007	HTO	0.45	0.10	0.29	=
12/14/2007	HTO	0.29	0.10	0.29	=
12/14/2007	HTO	0.31	0.10	0.29	=
	Average	0.88			
	Minimum	0.10			
	Maximum	3.14			

ISCO 103 HTO Activity for 2007

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	ValidationCode
1/1/2007	HTO	0.74	0.11	0.30	=
1/1/2007	HTO	0.78	0.11	0.30	=
1/2/2007	HTO	0.89	0.11	0.30	=
1/2/2007	HTO	0.90	0.11	0.30	=
1/3/2007	HTO	0.56	0.10	0.30	=
1/3/2007	HTO	0.66	0.10	0.30	=
1/4/2007	HTO	0.75	0.11	0.30	=
1/4/2007	HTO	0.85	0.11	0.30	=
1/5/2007	HTO	0.95	0.11	0.30	=
1/5/2007	HTO	1.16	0.11	0.30	=
1/6/2007	HTO	0.77	0.11	0.30	=
1/6/2007	HTO	0.89	0.11	0.30	=
1/7/2007	HTO	0.39	0.10	0.30	=
1/7/2007	HTO	0.47	0.10	0.30	=
1/8/2007	HTO	0.45	0.10	0.30	=
1/8/2007	HTO	0.56	0.10	0.30	=
1/9/2007	HTO	0.57	0.10	0.30	=
1/9/2007	HTO	0.67	0.10	0.30	=
1/10/2007	HTO	0.59	0.10	0.30	=
1/10/2007	HTO	0.62	0.10	0.30	=
1/11/2007	HTO	0.50	0.10	0.30	=
1/11/2007	HTO	0.60	0.10	0.30	=
1/12/2007	HTO	0.65	0.10	0.30	=
1/12/2007	HTO	0.69	0.10	0.30	=
1/13/2007	HTO	0.48	0.10	0.30	=
1/13/2007	HTO	0.53	0.10	0.30	=
1/14/2007	HTO	0.42	0.10	0.30	=
1/14/2007	HTO	0.59	0.10	0.30	=
1/15/2007	HTO	0.40	0.10	0.30	=
1/15/2007	HTO	0.48	0.10	0.30	=
1/16/2007	HTO	0.44	0.10	0.30	=
1/16/2007	HTO	0.47	0.10	0.30	=
1/17/2007	HTO	0.29	0.10	0.30	U
1/17/2007	HTO	0.41	0.10	0.30	=
1/18/2007	HTO	0.54	0.11	0.33	=
1/18/2007	HTO	0.65	0.11	0.33	=
1/19/2007	HTO	0.37	0.11	0.33	=
1/19/2007	HTO	0.58	0.11	0.33	=
1/20/2007	HTO	0.47	0.11	0.33	=
1/20/2007	HTO	0.61	0.11	0.33	=
1/21/2007	HTO	0.68	0.11	0.33	=
1/21/2007	HTO	0.72	0.11	0.33	=
1/22/2007	HTO	0.71	0.11	0.33	=
1/22/2007	HTO	0.89	0.12	0.33	=
1/23/2007	HTO	0.76	0.12	0.33	=
1/23/2007	HTO	0.92	0.12	0.33	=
1/24/2007	HTO	0.72	0.11	0.33	=
1/24/2007	HTO	0.87	0.12	0.33	=
1/25/2007	HTO	0.65	0.11	0.33	=
1/25/2007	HTO	0.74	0.11	0.33	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
1/26/2007	HTO	0.75	0.11	0.33	=
1/26/2007	HTO	0.78	0.12	0.33	=
1/27/2007	HTO	0.84	0.12	0.33	=
1/27/2007	HTO	0.88	0.12	0.33	=
2/1/2007	HTO	0.73	0.11	0.33	=
2/1/2007	HTO	0.74	0.11	0.33	=
2/18/2007	HTO	0.81	0.10	0.28	=
2/18/2007	HTO	0.90	0.11	0.28	=
2/19/2007	HTO	1.07	0.11	0.28	=
2/19/2007	HTO	1.30	0.11	0.28	=
2/20/2007	HTO	1.15	0.11	0.28	=
2/20/2007	HTO	1.34	0.11	0.28	=
2/22/2007	HTO	1.04	0.11	0.28	=
2/22/2007	HTO	1.09	0.11	0.28	=
2/23/2007	HTO	0.98	0.11	0.28	=
2/23/2007	HTO	1.15	0.11	0.28	=
2/24/2007	HTO	0.96	0.11	0.28	=
2/24/2007	HTO	1.07	0.11	0.28	=
2/25/2007	HTO	0.96	0.11	0.28	=
2/25/2007	HTO	0.96	0.11	0.28	=
2/26/2007	HTO	0.93	0.11	0.28	=
2/26/2007	HTO	1.02	0.11	0.28	=
2/27/2007	HTO	0.81	0.12	0.34	=
2/27/2007	HTO	0.83	0.12	0.34	=
2/28/2007	HTO	0.76	0.12	0.34	=
2/28/2007	HTO	1.01	0.12	0.34	=
3/1/2007	HTO	0.73	0.12	0.34	=
3/1/2007	HTO	0.98	0.12	0.34	=
3/2/2007	HTO	0.77	0.12	0.34	=
3/2/2007	HTO	0.95	0.12	0.34	=
3/3/2007	HTO	0.65	0.12	0.34	=
3/3/2007	HTO	0.90	0.12	0.34	=
3/4/2007	HTO	0.72	0.12	0.34	=
3/4/2007	HTO	0.83	0.12	0.34	=
3/5/2007	HTO	0.71	0.12	0.34	=
3/5/2007	HTO	0.74	0.12	0.34	=
3/6/2007	HTO	0.73	0.12	0.34	=
3/6/2007	HTO	0.78	0.12	0.34	=
3/7/2007	HTO	0.80	0.12	0.34	=
3/7/2007	HTO	0.92	0.12	0.34	=
3/8/2007	HTO	0.75	0.12	0.34	=
3/8/2007	HTO	0.86	0.12	0.34	=
3/9/2007	HTO	0.80	0.12	0.34	=
3/9/2007	HTO	0.88	0.12	0.34	=
3/10/2007	HTO	0.64	0.12	0.34	=
3/10/2007	HTO	0.86	0.12	0.34	=
3/11/2007	HTO	0.72	0.12	0.34	=
3/11/2007	HTO	0.80	0.12	0.34	=
3/12/2007	HTO	0.65	0.12	0.34	=
3/12/2007	HTO	0.72	0.12	0.34	=
3/13/2007	HTO	0.62	0.12	0.34	=
3/13/2007	HTO	0.70	0.12	0.34	=
3/14/2007	HTO	0.94	0.12	0.34	=
3/14/2007	HTO	1.04	0.12	0.34	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
3/15/2007	HTO	1.18	0.13	0.34	=
3/15/2007	HTO	1.35	0.13	0.34	=
3/16/2007	HTO	1.22	0.13	0.34	=
3/16/2007	HTO	1.26	0.13	0.34	=
3/17/2007	HTO	1.49	0.13	0.34	=
3/17/2007	HTO	1.53	0.13	0.34	=
3/18/2007	HTO	1.08	0.13	0.34	=
3/18/2007	HTO	1.15	0.13	0.34	=
3/19/2007	HTO	1.10	0.13	0.34	=
3/19/2007	HTO	1.36	0.13	0.34	=
3/20/2007	HTO	0.93	0.12	0.34	=
3/20/2007	HTO	1.15	0.13	0.34	=
3/21/2007	HTO	1.12	0.13	0.34	=
3/21/2007	HTO	1.24	0.13	0.34	=
3/23/2007	HTO	1.41	0.13	0.33	=
3/23/2007	HTO	1.49	0.13	0.33	=
3/24/2007	HTO	1.40	0.13	0.33	=
3/24/2007	HTO	1.49	0.13	0.33	=
3/25/2007	HTO	1.37	0.13	0.33	=
3/25/2007	HTO	1.48	0.13	0.33	=
3/26/2007	HTO	1.27	0.13	0.33	=
3/26/2007	HTO	1.48	0.13	0.33	=
3/27/2007	HTO	1.13	0.13	0.33	=
3/27/2007	HTO	1.28	0.13	0.33	=
3/28/2007	HTO	1.28	0.13	0.33	=
3/28/2007	HTO	1.32	0.13	0.33	=
3/29/2007	HTO	1.77	0.14	0.33	=
3/29/2007	HTO	1.84	0.14	0.33	=
3/30/2007	HTO	1.50	0.13	0.33	=
3/30/2007	HTO	1.84	0.14	0.33	=
3/31/2007	HTO	1.63	0.13	0.33	=
3/31/2007	HTO	1.79	0.14	0.33	=
4/1/2007	HTO	1.50	0.13	0.33	=
4/1/2007	HTO	1.65	0.14	0.33	=
4/2/2007	HTO	1.59	0.13	0.33	=
4/2/2007	HTO	1.63	0.13	0.33	=
4/4/2007	HTO	1.79	0.14	0.33	=
4/4/2007	HTO	1.84	0.14	0.33	=
4/5/2007	HTO	1.77	0.14	0.33	=
4/5/2007	HTO	1.92	0.14	0.33	=
4/6/2007	HTO	1.70	0.14	0.33	=
4/6/2007	HTO	1.76	0.14	0.33	=
4/7/2007	HTO	1.35	0.13	0.33	=
4/7/2007	HTO	1.65	0.14	0.33	=
4/8/2007	HTO	1.38	0.13	0.33	=
4/8/2007	HTO	1.62	0.13	0.33	=
4/9/2007	HTO	1.23	0.13	0.33	=
4/9/2007	HTO	1.37	0.13	0.33	=
4/10/2007	HTO	1.33	0.13	0.33	=
4/10/2007	HTO	1.49	0.13	0.33	=
4/11/2007	HTO	1.00	0.12	0.33	=
4/11/2007	HTO	1.14	0.12	0.33	=
4/12/2007	HTO	1.75	0.13	0.33	=
4/12/2007	HTO	1.79	0.14	0.33	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
4/13/2007	HTO	1.36	0.13	0.33	=
4/13/2007	HTO	1.39	0.13	0.33	=
4/14/2007	HTO	1.09	0.12	0.33	=
4/14/2007	HTO	1.13	0.12	0.33	=
4/15/2007	HTO	0.61	0.11	0.33	=
4/15/2007	HTO	0.76	0.12	0.33	=
4/16/2007	HTO	0.57	0.11	0.33	=
4/16/2007	HTO	0.79	0.12	0.33	=
4/17/2007	HTO	0.71	0.12	0.33	=
4/17/2007	HTO	0.89	0.12	0.33	=
4/18/2007	HTO	0.72	0.12	0.33	=
4/18/2007	HTO	0.78	0.12	0.33	=
4/19/2007	HTO	0.81	0.12	0.33	=
4/19/2007	HTO	0.91	0.12	0.33	=
4/20/2007	HTO	0.71	0.12	0.33	=
4/20/2007	HTO	0.88	0.12	0.33	=
4/21/2007	HTO	0.82	0.12	0.33	=
4/21/2007	HTO	0.85	0.12	0.33	=
4/22/2007	HTO	0.78	0.12	0.33	=
4/22/2007	HTO	0.81	0.12	0.33	=
4/23/2007	HTO	0.72	0.12	0.33	=
4/23/2007	HTO	0.79	0.12	0.33	=
4/24/2007	HTO	0.77	0.12	0.33	=
4/24/2007	HTO	1.23	0.13	0.33	=
4/25/2007	HTO	0.59	0.11	0.33	=
4/25/2007	HTO	0.85	0.12	0.33	=
4/25/2007	HTO	0.89	0.12	0.33	=
4/25/2007	HTO	0.96	0.12	0.33	=
4/26/2007	HTO	0.76	0.12	0.33	=
4/26/2007	HTO	0.78	0.12	0.33	=
4/27/2007	HTO	0.84	0.12	0.33	=
4/27/2007	HTO	0.92	0.12	0.33	=
4/29/2007	HTO	0.93	0.12	0.33	=
4/29/2007	HTO	1.07	0.12	0.33	=
4/30/2007	HTO	1.04	0.12	0.33	=
4/30/2007	HTO	1.22	0.13	0.33	=
5/1/2007	HTO	0.68	0.13	0.38	=
5/1/2007	HTO	0.86	0.13	0.38	=
5/2/2007	HTO	0.87	0.11	0.32	=
5/2/2007	HTO	0.90	0.12	0.32	=
5/3/2007	HTO	0.83	0.13	0.38	=
5/3/2007	HTO	1.08	0.14	0.38	=
5/4/2007	HTO	1.30	0.14	0.38	=
5/4/2007	HTO	1.36	0.14	0.38	=
5/5/2007	HTO	1.46	0.14	0.38	=
5/5/2007	HTO	1.77	0.15	0.38	=
5/6/2007	HTO	1.09	0.14	0.38	=
5/6/2007	HTO	1.39	0.14	0.38	=
5/7/2007	HTO	1.03	0.13	0.38	=
5/7/2007	HTO	1.30	0.14	0.38	=
5/8/2007	HTO	1.09	0.14	0.38	=
5/8/2007	HTO	1.25	0.14	0.38	=
5/9/2007	HTO	1.01	0.13	0.38	=
5/9/2007	HTO	1.17	0.14	0.38	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
5/10/2007	HTO	0.96	0.13	0.38	=
5/10/2007	HTO	1.21	0.14	0.38	=
5/11/2007	HTO	0.94	0.13	0.38	=
5/11/2007	HTO	1.03	0.13	0.38	=
5/12/2007	HTO	0.83	0.13	0.38	=
5/12/2007	HTO	0.95	0.13	0.38	=
5/13/2007	HTO	0.66	0.13	0.38	=
5/13/2007	HTO	0.89	0.13	0.38	=
5/14/2007	HTO	0.67	0.13	0.38	=
5/14/2007	HTO	0.73	0.13	0.38	=
5/15/2007	HTO	0.86	0.13	0.38	=
5/15/2007	HTO	0.87	0.13	0.38	=
5/16/2007	HTO	1.18	0.14	0.38	=
5/16/2007	HTO	1.23	0.14	0.38	=
5/17/2007	HTO	1.98	0.15	0.38	=
5/17/2007	HTO	2.18	0.15	0.38	=
5/18/2007	HTO	1.03	0.13	0.38	=
5/18/2007	HTO	1.20	0.14	0.38	=
5/19/2007	HTO	0.87	0.13	0.38	=
5/19/2007	HTO	1.02	0.13	0.38	=
5/20/2007	HTO	0.71	0.11	0.32	=
5/20/2007	HTO	0.77	0.11	0.32	=
5/21/2007	HTO	0.78	0.13	0.38	=
5/21/2007	HTO	0.95	0.13	0.38	=
5/22/2007	HTO	0.80	0.11	0.31	=
5/22/2007	HTO	0.85	0.11	0.31	=
5/23/2007	HTO	0.72	0.11	0.31	=
5/23/2007	HTO	0.93	0.11	0.31	=
5/24/2007	HTO	0.63	0.11	0.31	=
5/24/2007	HTO	0.75	0.11	0.31	=
5/25/2007	HTO	0.76	0.11	0.31	=
5/25/2007	HTO	0.82	0.11	0.31	=
5/26/2007	HTO	0.79	0.11	0.31	=
5/26/2007	HTO	0.83	0.11	0.31	=
5/27/2007	HTO	0.73	0.11	0.31	=
5/27/2007	HTO	0.78	0.11	0.31	=
5/28/2007	HTO	0.49	0.10	0.31	=
5/28/2007	HTO	0.58	0.11	0.31	=
5/29/2007	HTO	0.44	0.11	0.33	=
5/29/2007	HTO	0.45	0.11	0.33	=
5/30/2007	HTO	0.62	0.11	0.31	=
5/31/2007	HTO	0.50	0.10	0.31	=
5/31/2007	HTO	0.61	0.11	0.31	=
6/1/2007	HTO	0.47	0.10	0.31	=
6/1/2007	HTO	0.62	0.11	0.31	=
6/2/2007	HTO	0.39	0.10	0.31	=
6/2/2007	HTO	0.55	0.11	0.31	=
6/3/2007	HTO	0.43	0.10	0.31	=
6/3/2007	HTO	0.50	0.10	0.31	=
6/4/2007	HTO	0.20	0.10	0.33	U
6/4/2007	HTO	0.28	0.11	0.33	U
6/5/2007	HTO	0.44	0.10	0.31	=
6/5/2007	HTO	0.49	0.10	0.31	=
6/6/2007	HTO	0.46	0.10	0.31	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
6/6/2007	HTO	0.52	0.11	0.31	=
6/7/2007	HTO	0.51	0.10	0.31	=
6/7/2007	HTO	0.60	0.11	0.31	=
6/8/2007	HTO	0.60	0.11	0.31	=
6/8/2007	HTO	0.62	0.11	0.31	=
6/9/2007	HTO	0.41	0.10	0.31	=
6/9/2007	HTO	0.53	0.11	0.31	=
6/10/2007	HTO	0.44	0.10	0.31	=
6/10/2007	HTO	0.56	0.11	0.31	=
6/11/2007	HTO	0.47	0.10	0.31	=
6/11/2007	HTO	0.56	0.11	0.31	=
6/12/2007	HTO	0.46	0.10	0.31	=
6/12/2007	HTO	0.56	0.11	0.31	=
6/13/2007	HTO	0.49	0.10	0.29	=
6/13/2007	HTO	0.57	0.10	0.29	=
6/14/2007	HTO	0.56	0.10	0.29	=
6/14/2007	HTO	0.61	0.10	0.29	=
7/3/2007	HTO	0.31	0.12	0.36	U
7/3/2007	HTO	0.53	0.12	0.36	=
7/4/2007	HTO	1.85	0.14	0.36	=
7/4/2007	HTO	1.88	0.14	0.36	=
7/5/2007	HTO	0.22	0.11	0.36	U
7/5/2007	HTO	0.23	0.11	0.36	U
7/6/2007	HTO	0.51	0.12	0.36	=
7/6/2007	HTO	0.69	0.12	0.36	=
7/7/2007	HTO	0.39	0.12	0.36	=
7/7/2007	HTO	0.58	0.12	0.36	=
7/8/2007	HTO	0.43	0.12	0.36	=
7/8/2007	HTO	0.59	0.12	0.36	=
7/9/2007	HTO	0.21	0.11	0.36	U
7/9/2007	HTO	0.48	0.12	0.36	=
7/10/2007	HTO	0.33	0.12	0.36	U
7/10/2007	HTO	0.35	0.12	0.36	U
7/11/2007	HTO	0.30	0.11	0.36	U
7/11/2007	HTO	0.34	0.12	0.36	U
7/12/2007	HTO	0.36	0.12	0.36	=
7/12/2007	HTO	0.46	0.12	0.36	=
7/13/2007	HTO	0.29	0.11	0.36	U
7/13/2007	HTO	0.43	0.12	0.36	=
7/14/2007	HTO	0.32	0.12	0.36	U
7/14/2007	HTO	0.39	0.12	0.36	=
7/15/2007	HTO	0.20	0.11	0.36	U
7/15/2007	HTO	0.26	0.11	0.36	U
7/16/2007	HTO	0.21	0.11	0.36	U
7/16/2007	HTO	0.25	0.11	0.36	U
7/17/2007	HTO	0.19	0.11	0.36	U
7/17/2007	HTO	0.30	0.11	0.36	U
7/18/2007	HTO	0.13	0.11	0.36	U
7/18/2007	HTO	0.23	0.11	0.36	U
7/19/2007	HTO	0.38	0.12	0.36	=
7/19/2007	HTO	0.41	0.12	0.36	=
7/20/2007	HTO	0.34	0.12	0.36	U
7/20/2007	HTO	0.37	0.12	0.36	=
7/21/2007	HTO	0.20	0.11	0.36	U

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
7/21/2007	HTO	0.37	0.12	0.36	=
7/22/2007	HTO	0.37	0.12	0.36	=
7/22/2007	HTO	0.40	0.12	0.36	=
7/23/2007	HTO	0.16	0.11	0.36	U
7/23/2007	HTO	0.49	0.12	0.36	=
7/24/2007	HTO	0.31	0.11	0.36	U
7/24/2007	HTO	0.41	0.12	0.36	=
7/25/2007	HTO	0.28	0.10	0.33	U
7/25/2007	HTO	0.28	0.11	0.33	U
7/26/2007	HTO	0.28	0.11	0.33	U
7/26/2007	HTO	0.34	0.11	0.33	=
7/27/2007	HTO	0.32	0.11	0.33	U
7/27/2007	HTO	0.37	0.11	0.33	=
7/28/2007	HTO	0.35	0.11	0.33	=
7/28/2007	HTO	0.46	0.11	0.33	=
7/29/2007	HTO	0.20	0.10	0.33	U
7/29/2007	HTO	0.33	0.11	0.33	=
7/30/2007	HTO	0.56	0.11	0.33	=
7/30/2007	HTO	0.74	0.11	0.33	=
7/31/2007	HTO	0.43	0.11	0.33	=
7/31/2007	HTO	0.63	0.11	0.33	=
8/1/2007	HTO	0.32	0.11	0.33	U
8/1/2007	HTO	0.54	0.11	0.33	=
8/2/2007	HTO	0.42	0.11	0.33	=
8/2/2007	HTO	0.46	0.11	0.33	=
8/3/2007	HTO	0.26	0.10	0.33	U
8/3/2007	HTO	0.34	0.11	0.33	=
8/4/2007	HTO	0.38	0.11	0.33	=
8/4/2007	HTO	0.39	0.11	0.33	=
8/5/2007	HTO	0.42	0.11	0.33	=
8/5/2007	HTO	0.44	0.11	0.33	=
8/6/2007	HTO	0.34	0.11	0.33	=
8/6/2007	HTO	0.44	0.11	0.33	=
8/7/2007	HTO	0.40	0.11	0.33	=
8/7/2007	HTO	0.44	0.11	0.33	=
8/8/2007	HTO	0.36	0.11	0.33	=
8/8/2007	HTO	0.42	0.11	0.33	=
8/9/2007	HTO	0.18	0.10	0.33	U
8/9/2007	HTO	0.29	0.11	0.33	U
8/10/2007	HTO	0.26	0.10	0.33	U
8/10/2007	HTO	0.33	0.11	0.33	U
8/11/2007	HTO	0.34	0.11	0.33	=
8/11/2007	HTO	0.38	0.11	0.33	=
8/12/2007	HTO	0.35	0.11	0.33	=
8/12/2007	HTO	0.39	0.11	0.33	=
8/13/2007	HTO	0.27	0.10	0.33	U
8/13/2007	HTO	0.27	0.10	0.33	U
8/14/2007	HTO	0.26	0.10	0.32	U
8/14/2007	HTO	0.42	0.10	0.32	=
8/15/2007	HTO	0.34	0.10	0.32	=
8/15/2007	HTO	0.34	0.10	0.32	=
8/16/2007	HTO	0.21	0.10	0.32	U
8/16/2007	HTO	0.28	0.10	0.32	U
8/17/2007	HTO	0.21	0.10	0.32	U

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
8/17/2007	HTO	0.22	0.10	0.32	U
8/18/2007	HTO	0.21	0.10	0.32	U
8/18/2007	HTO	0.30	0.10	0.32	U
8/19/2007	HTO	0.12	0.10	0.32	U
8/19/2007	HTO	0.44	0.11	0.32	=
8/20/2007	HTO	0.12	0.10	0.32	U
8/20/2007	HTO	0.21	0.10	0.32	U
8/21/2007	HTO	0.22	0.10	0.32	U
8/21/2007	HTO	0.26	0.10	0.32	U
8/22/2007	HTO	0.25	0.10	0.32	U
8/22/2007	HTO	0.38	0.10	0.32	=
8/23/2007	HTO	0.13	0.10	0.32	U
8/23/2007	HTO	0.16	0.10	0.32	U
8/24/2007	HTO	0.12	0.10	0.32	U
8/24/2007	HTO	0.17	0.10	0.32	U
8/25/2007	HTO	0.20	0.10	0.32	U
8/25/2007	HTO	0.33	0.10	0.32	=
8/26/2007	HTO	0.12	0.10	0.32	U
8/26/2007	HTO	0.13	0.10	0.32	U
8/27/2007	HTO	0.28	0.10	0.32	U
8/27/2007	HTO	0.32	0.10	0.32	=
8/28/2007	HTO	0.07	0.10	0.32	U
8/28/2007	HTO	0.28	0.10	0.32	U
8/29/2007	HTO	0.14	0.10	0.32	U
8/29/2007	HTO	0.17	0.10	0.32	U
8/30/2007	HTO	0.18	0.10	0.32	U
8/30/2007	HTO	0.55	0.11	0.32	U
8/31/2007	HTO	0.14	0.10	0.32	U
8/31/2007	HTO	0.27	0.10	0.32	U
9/26/2007	HTO	0.31	0.10	0.32	U
9/27/2007	HTO	0.15	0.10	0.32	U
9/27/2007	HTO	0.16	0.10	0.32	U
9/28/2007	HTO	0.11	0.10	0.32	U
9/28/2007	HTO	0.16	0.10	0.32	U
9/29/2007	HTO	0.13	0.10	0.32	U
9/29/2007	HTO	0.19	0.10	0.32	U
9/30/2007	HTO	0.18	0.10	0.32	U
10/1/2007	HTO	0.19	0.10	0.32	U
10/1/2007	HTO	0.25	0.10	0.32	U
10/2/2007	HTO	0.13	0.10	0.32	U
10/2/2007	HTO	0.18	0.10	0.32	U
10/3/2007	HTO	0.09	0.10	0.32	U
10/3/2007	HTO	0.26	0.10	0.32	U
10/4/2007	HTO	0.21	0.10	0.32	U
10/4/2007	HTO	0.21	0.10	0.32	U
10/5/2007	HTO	0.20	0.10	0.32	U
10/5/2007	HTO	0.25	0.10	0.32	U
10/6/2007	HTO	0.09	0.10	0.32	U
10/6/2007	HTO	0.18	0.10	0.32	U
10/7/2007	HTO	0.13	0.10	0.32	U
10/7/2007	HTO	0.25	0.10	0.32	U
10/8/2007	HTO	-0.03	0.09	0.32	U
10/8/2007	HTO	0.11	0.10	0.32	U
10/9/2007	HTO	0.18	0.10	0.32	U

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
10/9/2007	HTO	0.21	0.10	0.32	U
10/10/2007	HTO	0.16	0.10	0.32	U
10/10/2007	HTO	0.26	0.10	0.32	U
10/11/2007	HTO	0.24	0.10	0.32	U
10/11/2007	HTO	0.26	0.10	0.32	U
10/12/2007	HTO	0.04	0.10	0.32	U
10/12/2007	HTO	0.28	0.10	0.32	U
10/13/2007	HTO	0.03	0.10	0.32	U
10/13/2007	HTO	0.25	0.10	0.32	U
10/14/2007	HTO	0.09	0.10	0.32	U
10/14/2007	HTO	0.15	0.10	0.32	U
10/15/2007	HTO	0.08	0.10	0.32	U
10/15/2007	HTO	0.22	0.10	0.32	U
10/16/2007	HTO	0.15	0.11	0.35	U
10/16/2007	HTO	0.34	0.11	0.35	U
10/17/2007	HTO	0.13	0.11	0.35	U
10/17/2007	HTO	0.15	0.11	0.35	U
10/18/2007	HTO	0.18	0.11	0.35	U
10/18/2007	HTO	0.24	0.11	0.35	U
10/19/2007	HTO	0.01	0.11	0.35	U
10/19/2007	HTO	0.27	0.11	0.35	U
10/20/2007	HTO	0.11	0.11	0.35	U
10/20/2007	HTO	0.29	0.11	0.35	U
10/21/2007	HTO	0.31	0.11	0.35	U
10/21/2007	HTO	0.31	0.11	0.35	U
10/22/2007	HTO	0.18	0.11	0.35	U
10/22/2007	HTO	0.34	0.11	0.35	U
10/23/2007	HTO	0.03	0.11	0.35	U
10/23/2007	HTO	0.21	0.11	0.35	U
10/24/2007	HTO	0.21	0.11	0.35	U
10/24/2007	HTO	0.34	0.11	0.35	U
10/25/2007	HTO	0.23	0.11	0.35	U
10/25/2007	HTO	0.24	0.11	0.35	U
10/26/2007	HTO	0.29	0.11	0.35	U
11/21/2007	HTO	0.16	0.11	0.36	U
11/21/2007	HTO	0.21	0.11	0.36	U
11/22/2007	HTO	0.20	0.11	0.36	U
11/22/2007	HTO	0.27	0.11	0.36	U
11/23/2007	HTO	0.04	0.11	0.36	U
11/23/2007	HTO	0.16	0.11	0.36	U
11/24/2007	HTO	0.19	0.11	0.36	U
11/24/2007	HTO	0.34	0.11	0.36	U
11/25/2007	HTO	0.20	0.11	0.36	U
11/25/2007	HTO	0.22	0.11	0.36	U
11/26/2007	HTO	0.30	0.11	0.36	U
11/26/2007	HTO	0.32	0.11	0.36	U
11/27/2007	HTO	0.18	0.11	0.36	U
11/27/2007	HTO	0.19	0.11	0.36	U
11/28/2007	HTO	0.20	0.11	0.36	U
11/28/2007	HTO	0.22	0.11	0.36	U
11/29/2007	HTO	0.29	0.11	0.36	U
11/29/2007	HTO	0.44	0.12	0.36	=
11/30/2007	HTO	0.15	0.10	0.33	U
11/30/2007	HTO	0.49	0.11	0.33	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
12/10/2007	HTO	0.24	0.11	0.36	U
12/10/2007	HTO	0.28	0.11	0.36	U
	Average	0.66			
	Minimum	-0.03			
	Maximum	2.18			

ISCO EDRN HTO Activity for 2007

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	ValidationCode
1/1/2007	HTO	56.43	0.52	0.33	=
1/1/2007	HTO	56.96	0.52	0.33	=
1/2/2007	HTO	91.43	0.65	0.33	=
1/2/2007	HTO	92.62	0.66	0.33	=
1/3/2007	HTO	156.08	0.85	0.33	=
1/3/2007	HTO	160.10	0.86	0.33	=
1/4/2007	HTO	239.40	1.05	0.33	=
1/4/2007	HTO	242.88	1.06	0.33	=
1/5/2007	HTO	209.91	0.99	0.33	=
1/5/2007	HTO	210.25	0.99	0.33	=
1/6/2007	HTO	31.22	0.39	0.33	=
1/6/2007	HTO	31.64	0.39	0.33	=
1/7/2007	HTO	117.55	0.74	0.33	=
1/7/2007	HTO	119.35	0.75	0.33	=
1/8/2007	HTO	61.00	0.54	0.33	=
1/8/2007	HTO	62.46	0.54	0.33	=
1/9/2007	HTO	71.32	0.58	0.33	=
1/9/2007	HTO	71.45	0.58	0.33	=
1/10/2007	HTO	82.06	0.62	0.33	=
1/10/2007	HTO	85.57	0.63	0.33	=
2/27/2007	HTO	99.23	0.68	0.32	=
2/27/2007	HTO	122.99	0.75	0.32	=
2/28/2007	HTO	187.04	0.92	0.32	=
2/28/2007	HTO	187.60	0.93	0.32	=
3/1/2007	HTO	217.75	1.00	0.32	=
3/1/2007	HTO	219.82	1.00	0.32	=
3/2/2007	HTO	62.96	0.54	0.32	=
3/2/2007	HTO	63.35	0.54	0.32	=
3/3/2007	HTO	171.30	0.89	0.32	=
3/3/2007	HTO	171.50	0.89	0.32	=
3/4/2007	HTO	80.83	0.61	0.32	=
3/4/2007	HTO	102.39	0.69	0.32	=
3/23/2007	HTO	160.06	0.85	0.33	=
3/23/2007	HTO	160.60	0.85	0.33	=
3/24/2007	HTO	203.92	0.95	0.33	=
3/24/2007	HTO	207.27	0.96	0.33	=
4/10/2007	HTO	414.05	1.35	0.33	=
4/10/2007	HTO	415.22	1.36	0.33	=
4/11/2007	HTO	362.49	1.27	0.33	=
4/11/2007	HTO	365.30	1.28	0.33	=
4/12/2007	HTO	39.09	0.43	0.33	=
4/12/2007	HTO	40.46	0.44	0.33	=
4/13/2007	HTO	227.64	1.01	0.33	=
4/13/2007	HTO	228.65	1.01	0.33	=
4/14/2007	HTO	85.13	0.62	0.33	=
4/14/2007	HTO	87.27	0.63	0.33	=
4/15/2007	HTO	25.02	0.35	0.33	=
4/15/2007	HTO	25.11	0.35	0.33	=
4/16/2007	HTO	98.96	0.67	0.33	=
4/16/2007	HTO	100.27	0.68	0.33	=
4/17/2007	HTO	104.00	0.69	0.33	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
4/17/2007	HTO	104.03	0.69	0.33	=
4/18/2007	HTO	127.57	0.76	0.33	=
4/18/2007	HTO	128.18	0.76	0.33	=
4/19/2007	HTO	185.31	0.91	0.33	=
4/19/2007	HTO	188.33	0.92	0.33	=
4/20/2007	HTO	201.28	0.98	0.34	=
4/20/2007	HTO	201.67	0.98	0.34	=
4/21/2007	HTO	264.34	1.09	0.33	=
4/21/2007	HTO	264.85	1.09	0.33	=
4/22/2007	HTO	317.67	1.19	0.33	=
4/22/2007	HTO	321.85	1.20	0.33	=
4/23/2007	HTO	325.79	1.21	0.33	=
4/23/2007	HTO	327.86	1.21	0.33	=
4/24/2007	HTO	222.23	1.00	0.33	=
4/24/2007	HTO	222.67	1.00	0.33	=
4/25/2007	HTO	165.40	0.86	0.33	=
4/25/2007	HTO	165.82	0.86	0.33	=
4/26/2007	HTO	220.53	1.05	0.43	=
4/26/2007	HTO	222.55	1.05	0.43	=
4/27/2007	HTO	78.70	0.63	0.43	=
4/27/2007	HTO	81.44	0.64	0.43	=
4/28/2007	HTO	227.66	1.06	0.43	=
4/28/2007	HTO	247.19	1.11	0.43	=
4/29/2007	HTO	78.03	0.63	0.43	=
4/29/2007	HTO	79.57	0.64	0.43	=
4/30/2007	HTO	251.46	1.12	0.43	=
4/30/2007	HTO	256.27	1.13	0.43	=
5/1/2007	HTO	337.18	1.23	0.33	=
5/1/2007	HTO	339.24	1.23	0.33	=
5/2/2007	HTO	389.42	1.32	0.33	=
5/2/2007	HTO	393.37	1.33	0.33	=
5/3/2007	HTO	37.80	0.42	0.33	=
5/3/2007	HTO	37.85	0.42	0.33	=
5/4/2007	HTO	191.37	0.93	0.33	=
5/4/2007	HTO	193.27	0.93	0.33	=
5/22/2007	HTO	396.19	1.32	0.29	=
5/22/2007	HTO	399.65	1.33	0.29	=
5/23/2007	HTO	429.87	1.38	0.29	=
5/23/2007	HTO	434.71	1.38	0.29	=
5/24/2007	HTO	440.83	1.39	0.29	=
5/24/2007	HTO	445.49	1.40	0.29	=
5/25/2007	HTO	469.56	1.44	0.29	=
5/25/2007	HTO	473.04	1.44	0.29	=
5/26/2007	HTO	468.97	1.44	0.29	=
5/26/2007	HTO	474.81	1.45	0.29	=
5/27/2007	HTO	479.55	1.45	0.29	=
5/27/2007	HTO	487.52	1.47	0.29	=
5/28/2007	HTO	492.34	1.47	0.29	=
5/28/2007	HTO	493.08	1.47	0.29	=
5/29/2007	HTO	496.43	1.48	0.29	=
5/29/2007	HTO	499.33	1.48	0.29	=
5/30/2007	HTO	494.28	1.48	0.29	=
5/30/2007	HTO	496.93	1.48	0.29	=
5/31/2007	HTO	505.15	1.49	0.29	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
5/31/2007	HTO	507.85	1.50	0.29	=
6/1/2007	HTO	502.81	1.49	0.29	=
6/1/2007	HTO	504.42	1.49	0.29	=
6/2/2007	HTO	509.49	1.50	0.29	=
6/2/2007	HTO	515.55	1.51	0.29	=
6/3/2007	HTO	523.08	1.52	0.29	=
6/3/2007	HTO	524.66	1.52	0.29	=
6/4/2007	HTO	66.39	0.55	0.29	=
6/4/2007	HTO	67.06	0.55	0.29	=
6/5/2007	HTO	17.23	0.29	0.29	=
6/5/2007	HTO	17.71	0.29	0.29	=
6/6/2007	HTO	54.35	0.50	0.29	=
6/6/2007	HTO	54.53	0.50	0.29	=
6/7/2007	HTO	136.73	0.78	0.29	=
6/7/2007	HTO	138.78	0.79	0.29	=
6/8/2007	HTO	162.04	0.85	0.29	=
6/8/2007	HTO	163.03	0.85	0.29	=
6/9/2007	HTO	36.03	0.41	0.29	=
6/9/2007	HTO	38.71	0.42	0.29	=
6/10/2007	HTO	129.84	0.76	0.29	=
6/10/2007	HTO	133.18	0.77	0.29	=
6/11/2007	HTO	205.39	0.95	0.29	=
6/11/2007	HTO	207.21	0.96	0.29	=
6/12/2007	HTO	285.95	1.12	0.29	=
6/12/2007	HTO	287.02	1.13	0.29	=
6/13/2007	HTO	299.43	1.13	0.30	=
6/13/2007	HTO	301.29	1.14	0.30	=
6/19/2007	HTO	31.08	0.38	0.30	=
6/19/2007	HTO	31.53	0.38	0.30	=
6/20/2007	HTO	35.99	0.40	0.30	=
6/20/2007	HTO	36.40	0.40	0.30	=
6/21/2007	HTO	128.90	0.75	0.30	=
6/21/2007	HTO	130.29	0.75	0.30	=
6/22/2007	HTO	83.81	0.60	0.30	=
6/22/2007	HTO	86.54	0.61	0.30	=
6/23/2007	HTO	42.30	0.43	0.30	=
6/23/2007	HTO	43.05	0.44	0.30	=
6/24/2007	HTO	42.58	0.44	0.30	=
6/24/2007	HTO	43.23	0.44	0.30	=
6/25/2007	HTO	54.41	0.49	0.30	=
6/25/2007	HTO	55.20	0.49	0.30	=
6/26/2007	HTO	48.43	0.46	0.30	=
6/26/2007	HTO	49.80	0.47	0.30	=
6/27/2007	HTO	67.19	0.54	0.30	=
6/27/2007	HTO	69.62	0.55	0.30	=
6/28/2007	HTO	2.49	0.14	0.30	=
6/28/2007	HTO	2.55	0.14	0.30	=
6/29/2007	HTO	32.60	0.38	0.30	=
6/29/2007	HTO	34.07	0.39	0.30	=
6/30/2007	HTO	87.51	0.62	0.30	=
6/30/2007	HTO	88.76	0.62	0.30	=
7/1/2007	HTO	127.75	0.74	0.30	=
7/1/2007	HTO	128.70	0.75	0.30	=
7/2/2007	HTO	328.93	1.19	0.30	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
7/2/2007	HTO	329.06	1.19	0.30	=
7/3/2007	HTO	232.77	1.00	0.32	=
7/3/2007	HTO	233.26	1.00	0.32	=
7/4/2007	HTO	243.72	1.03	0.32	=
7/4/2007	HTO	254.30	1.05	0.32	=
7/5/2007	HTO	36.09	0.40	0.32	=
7/5/2007	HTO	38.32	0.42	0.32	=
7/6/2007	HTO	6.95	0.20	0.32	=
7/6/2007	HTO	7.45	0.20	0.32	=
7/7/2007	HTO	66.66	0.54	0.32	=
7/7/2007	HTO	67.61	0.55	0.32	=
7/8/2007	HTO	138.71	0.78	0.32	=
7/8/2007	HTO	139.22	0.78	0.32	=
7/9/2007	HTO	190.21	0.91	0.32	=
7/9/2007	HTO	190.64	0.91	0.32	=
7/10/2007	HTO	223.10	0.98	0.32	=
7/10/2007	HTO	223.93	0.98	0.32	=
7/11/2007	HTO	133.20	0.76	0.32	=
7/11/2007	HTO	134.07	0.76	0.32	=
7/12/2007	HTO	166.89	0.85	0.32	=
7/12/2007	HTO	168.56	0.85	0.32	=
7/13/2007	HTO	72.17	0.56	0.32	=
7/13/2007	HTO	74.93	0.57	0.32	=
7/14/2007	HTO	46.19	0.45	0.32	=
7/14/2007	HTO	46.59	0.46	0.32	=
7/15/2007	HTO	102.79	0.67	0.32	=
7/15/2007	HTO	105.31	0.68	0.32	=
7/16/2007	HTO	33.71	0.39	0.31	=
7/16/2007	HTO	38.26	0.42	0.31	=
7/17/2007	HTO	88.17	0.62	0.32	=
7/17/2007	HTO	88.64	0.62	0.32	=
7/18/2007	HTO	28.88	0.36	0.32	=
7/18/2007	HTO	29.71	0.37	0.32	=
7/19/2007	HTO	2.25	0.14	0.32	=
7/19/2007	HTO	2.44	0.14	0.32	=
7/20/2007	HTO	15.57	0.28	0.32	=
7/20/2007	HTO	15.75	0.28	0.32	=
7/21/2007	HTO	68.84	0.55	0.32	=
7/21/2007	HTO	69.31	0.55	0.32	=
7/22/2007	HTO	111.95	0.70	0.32	=
7/22/2007	HTO	112.27	0.70	0.32	=
7/23/2007	HTO	142.41	0.79	0.32	=
7/23/2007	HTO	143.92	0.79	0.32	=
7/24/2007	HTO	4.88	0.17	0.32	=
7/24/2007	HTO	5.01	0.18	0.32	=
7/25/2007	HTO	68.21	0.55	0.30	=
7/25/2007	HTO	69.33	0.56	0.30	=
7/26/2007	HTO	105.10	0.68	0.30	=
7/26/2007	HTO	106.19	0.69	0.30	=
7/27/2007	HTO	5.81	0.18	0.30	=
7/27/2007	HTO	5.99	0.19	0.30	=
7/28/2007	HTO	6.76	0.19	0.30	=
7/28/2007	HTO	6.98	0.20	0.30	=
7/29/2007	HTO	15.62	0.28	0.30	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
7/29/2007	HTO	15.67	0.28	0.30	=
7/30/2007	HTO	19.10	0.30	0.30	=
7/30/2007	HTO	19.61	0.31	0.30	=
7/31/2007	HTO	77.22	0.59	0.30	=
7/31/2007	HTO	78.10	0.59	0.30	=
8/1/2007	HTO	126.98	0.75	0.30	=
8/1/2007	HTO	127.12	0.75	0.30	=
8/2/2007	HTO	165.37	0.85	0.30	=
8/2/2007	HTO	166.09	0.85	0.30	=
8/5/2007	HTO	8.12	0.21	0.32	=
8/5/2007	HTO	8.31	0.21	0.32	=
8/6/2007	HTO	23.29	0.33	0.30	=
8/6/2007	HTO	23.40	0.33	0.30	=
8/7/2007	HTO	52.69	0.49	0.30	=
8/7/2007	HTO	52.79	0.49	0.30	=
8/10/2007	HTO	67.20	0.55	0.30	=
8/10/2007	HTO	69.02	0.56	0.30	=
9/26/2007	HTO	5.53	0.19	0.33	=
9/26/2007	HTO	5.65	0.19	0.33	=
9/27/2007	HTO	0.95	0.12	0.33	=
9/27/2007	HTO	1.01	0.12	0.33	=
9/28/2007	HTO	4.56	0.18	0.33	=
9/28/2007	HTO	4.89	0.18	0.33	=
9/29/2007	HTO	22.12	0.34	0.33	=
9/29/2007	HTO	23.11	0.34	0.33	=
10/16/2007	HTO	1.96	0.13	0.31	=
10/16/2007	HTO	2.02	0.13	0.31	=
10/17/2007	HTO	6.79	0.20	0.31	=
10/17/2007	HTO	7.28	0.20	0.31	=
10/18/2007	HTO	10.65	0.23	0.31	=
10/18/2007	HTO	10.81	0.24	0.31	=
10/19/2007	HTO	2.99	0.15	0.31	=
10/19/2007	HTO	3.02	0.15	0.31	=
10/20/2007	HTO	9.70	0.23	0.31	=
10/20/2007	HTO	10.03	0.23	0.31	=
10/22/2007	HTO	2.28	0.14	0.31	=
10/22/2007	HTO	2.63	0.14	0.31	=
10/23/2007	HTO	0.56	0.11	0.31	=
10/24/2007	HTO	0.24	0.10	0.31	U
10/24/2007	HTO	0.28	0.10	0.31	U
10/25/2007	HTO	10.71	0.24	0.31	=
10/25/2007	HTO	10.98	0.24	0.31	=
10/26/2007	HTO	44.82	0.45	0.31	=
10/26/2007	HTO	45.57	0.45	0.31	=
10/27/2007	HTO	82.18	0.60	0.31	=
10/27/2007	HTO	83.33	0.61	0.31	=
10/28/2007	HTO	35.77	0.40	0.31	=
10/28/2007	HTO	35.85	0.41	0.31	=
10/29/2007	HTO	81.84	0.60	0.31	=
10/29/2007	HTO	82.22	0.60	0.31	=
10/30/2007	HTO	118.16	0.72	0.31	=
10/30/2007	HTO	118.82	0.72	0.31	=
11/5/2007	HTO	26.39	0.37	0.34	=
11/5/2007	HTO	26.77	0.37	0.34	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
11/6/2007	HTO	18.55	0.31	0.34	=
11/6/2007	HTO	18.82	0.32	0.34	=
11/7/2007	HTO	89.27	0.66	0.34	=
11/7/2007	HTO	90.20	0.66	0.34	=
11/8/2007	HTO	130.77	0.80	0.34	=
11/8/2007	HTO	132.09	0.80	0.34	=
11/9/2007	HTO	78.58	0.62	0.34	=
11/9/2007	HTO	79.37	0.62	0.34	=
11/10/2007	HTO	67.27	0.58	0.34	=
11/10/2007	HTO	67.30	0.58	0.34	=
11/11/2007	HTO	132.52	0.80	0.34	=
11/11/2007	HTO	134.69	0.81	0.34	=
11/12/2007	HTO	12.23	0.26	0.34	=
11/12/2007	HTO	12.54	0.27	0.34	=
11/13/2007	HTO	5.17	0.19	0.34	=
11/13/2007	HTO	5.49	0.19	0.34	=
11/14/2007	HTO	13.12	0.27	0.34	=
11/14/2007	HTO	13.22	0.27	0.34	=
11/15/2007	HTO	10.02	0.24	0.34	=
11/15/2007	HTO	10.22	0.24	0.34	=
11/16/2007	HTO	107.80	0.72	0.34	=
11/16/2007	HTO	108.39	0.73	0.34	=
11/17/2007	HTO	203.53	0.99	0.34	=
11/17/2007	HTO	203.94	0.99	0.34	=
11/18/2007	HTO	240.17	1.08	0.34	=
11/18/2007	HTO	240.50	1.08	0.34	=
11/19/2007	HTO	247.94	1.09	0.34	=
11/19/2007	HTO	249.13	1.10	0.34	=
11/20/2007	HTO	267.83	1.14	0.34	=
11/20/2007	HTO	270.06	1.14	0.34	=
11/21/2007	HTO	262.82	1.10	0.33	=
11/21/2007	HTO	267.26	1.11	0.33	=
11/22/2007	HTO	22.58	0.34	0.33	=
11/22/2007	HTO	23.26	0.34	0.33	=
11/23/2007	HTO	46.63	0.47	0.33	=
11/23/2007	HTO	46.78	0.47	0.33	=
12/13/2007	HTO	12.98	0.27	0.32	=
12/13/2007	HTO	13.23	0.27	0.32	=
12/14/2007	HTO	6.28	0.20	0.32	=
12/14/2007	HTO	6.32	0.20	0.32	=
12/15/2007	HTO	56.86	0.53	0.32	=
12/15/2007	HTO	59.20	0.54	0.32	=
12/16/2007	HTO	6.32	0.20	0.32	=
12/16/2007	HTO	6.52	0.20	0.32	=
12/17/2007	HTO	35.13	0.42	0.32	=
12/17/2007	HTO	35.39	0.42	0.32	=
12/18/2007	HTO	131.52	0.79	0.32	=
12/18/2007	HTO	131.63	0.79	0.32	=
12/19/2007	HTO	95.13	0.68	0.32	=
12/19/2007	HTO	95.62	0.68	0.32	=
12/20/2007	HTO	145.93	0.83	0.32	=
12/20/2007	HTO	146.52	0.84	0.32	=
12/21/2007	HTO	45.07	0.47	0.32	=
12/21/2007	HTO	45.35	0.47	0.32	=

Collection Date	Isotope	Activity (pCi/mL)	CU	MDA	Validation Code
12/22/2007	HTO	89.96	0.66	0.32	=
12/22/2007	HTO	90.89	0.66	0.32	=
12/23/2007	HTO	62.37	0.55	0.32	=
12/23/2007	HTO	63.29	0.55	0.32	=
12/24/2007	HTO	60.33	0.54	0.32	=
12/24/2007	HTO	61.88	0.55	0.32	=
12/25/2007	HTO	132.96	0.80	0.32	=
12/25/2007	HTO	133.58	0.80	0.32	=
12/26/2007	HTO	168.82	0.90	0.32	=
12/26/2007	HTO	169.61	0.90	0.32	=
12/27/2007	HTO	57.36	0.53	0.32	=
12/27/2007	HTO	57.86	0.53	0.32	=
12/28/2007	HTO	114.39	0.74	0.32	=
12/28/2007	HTO	115.63	0.74	0.32	=
	Average	135.39			
	Minimum	0.24			
	Maximum	524.66			

APPENDIX 4. Figures.

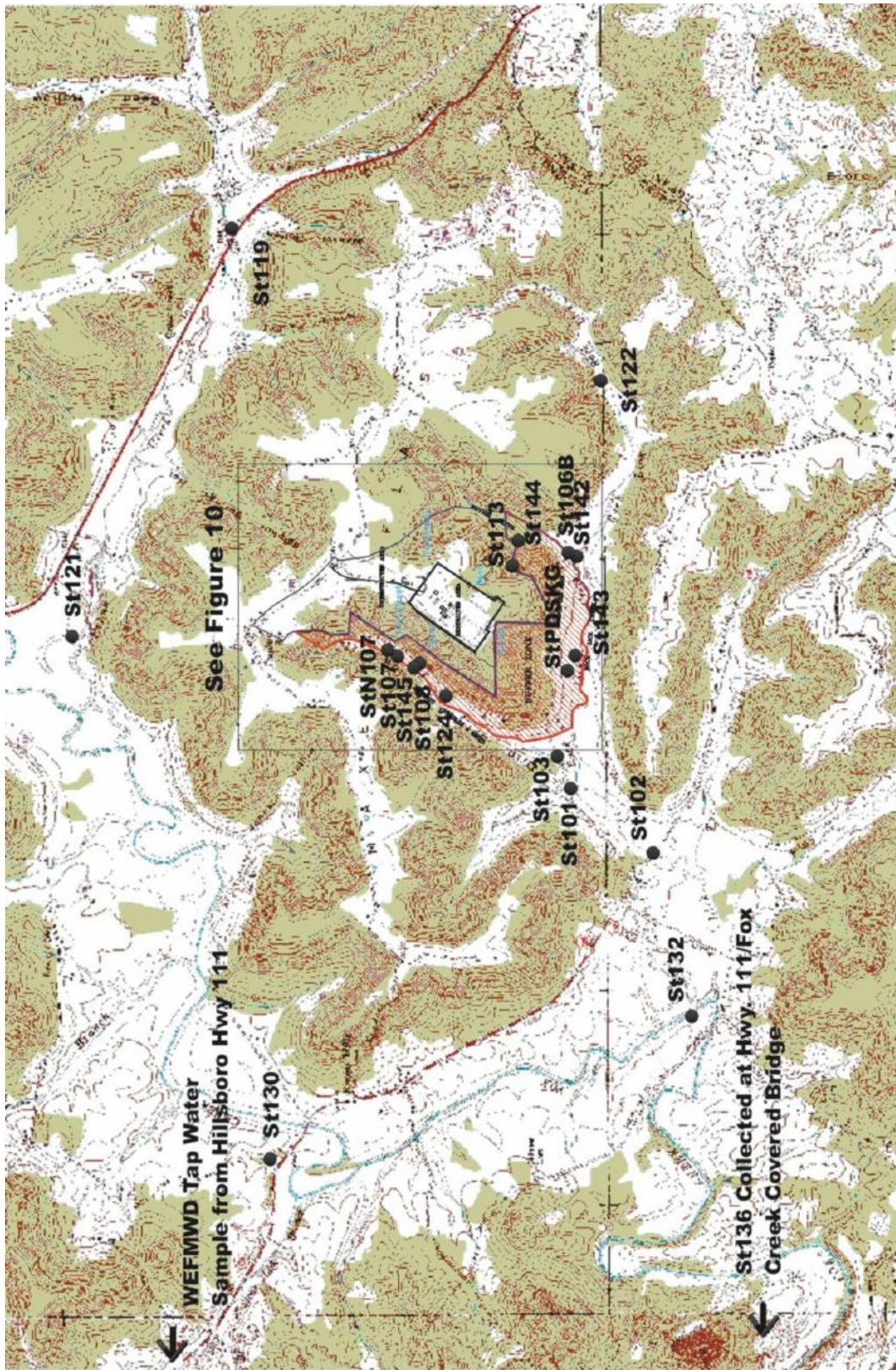


Figure 1. Background and off-site surface water sampling locations

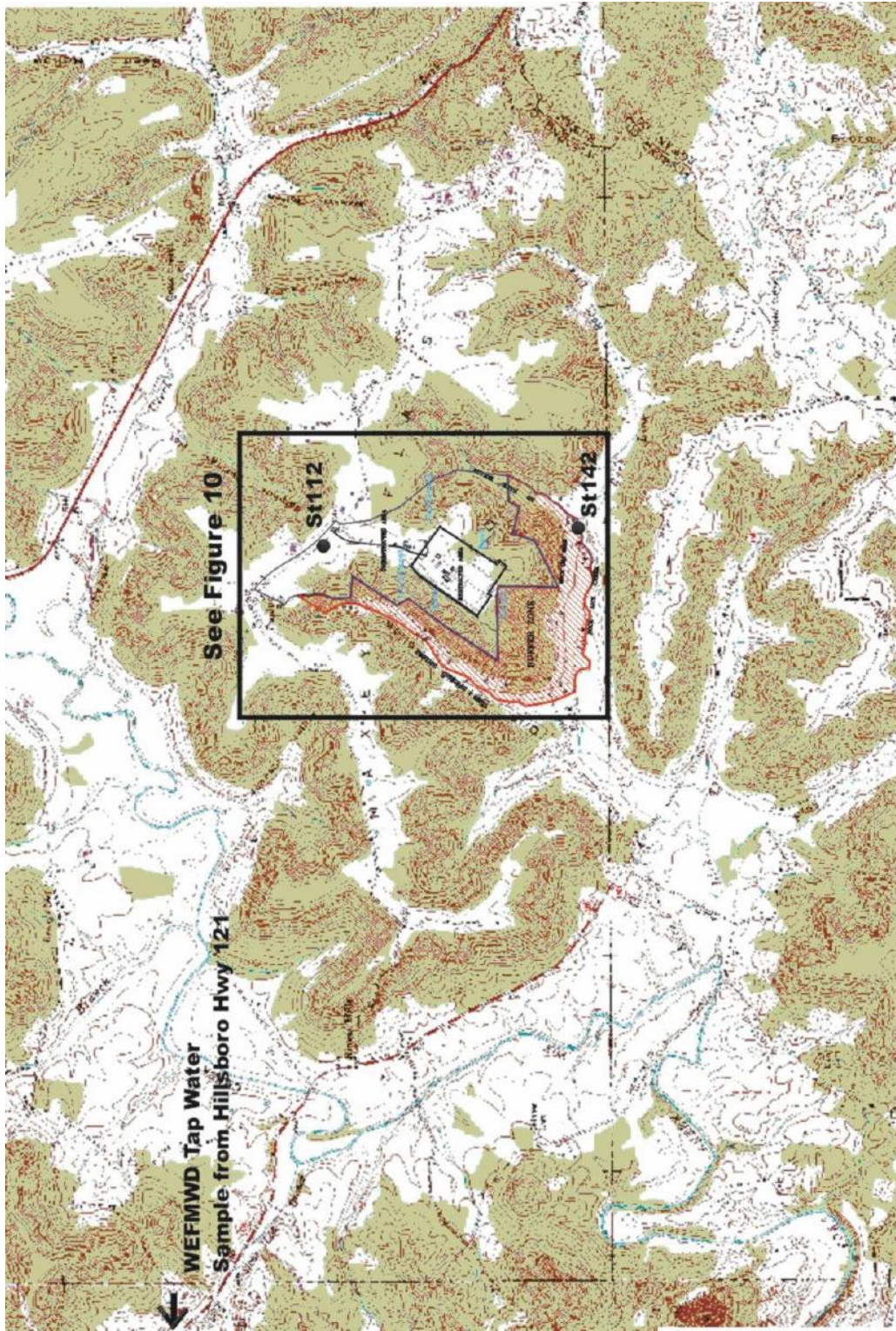


Figure 2. Background and off-site groundwater and drinking water locations

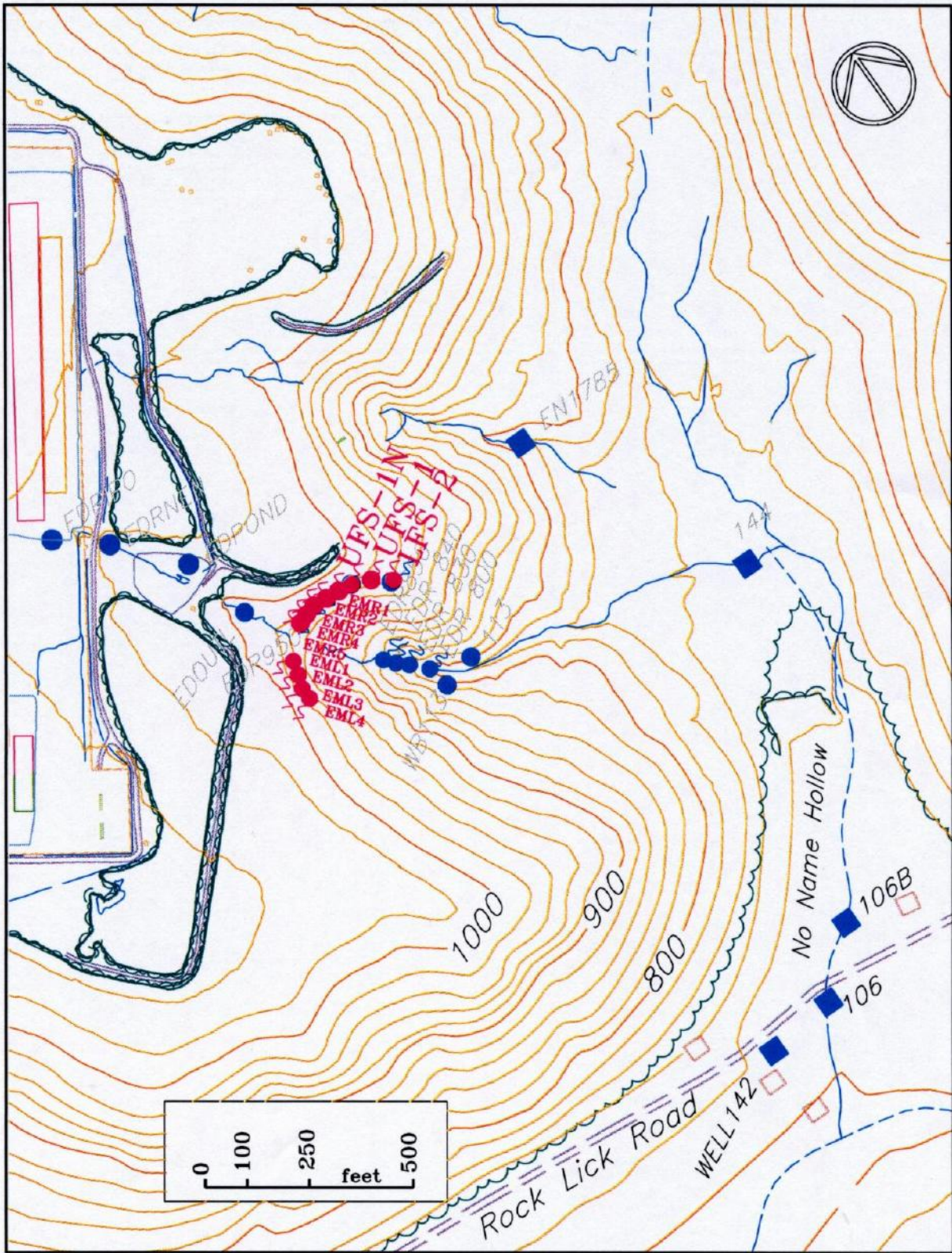


Figure 3. East Drain Hillside seep sampling locations.

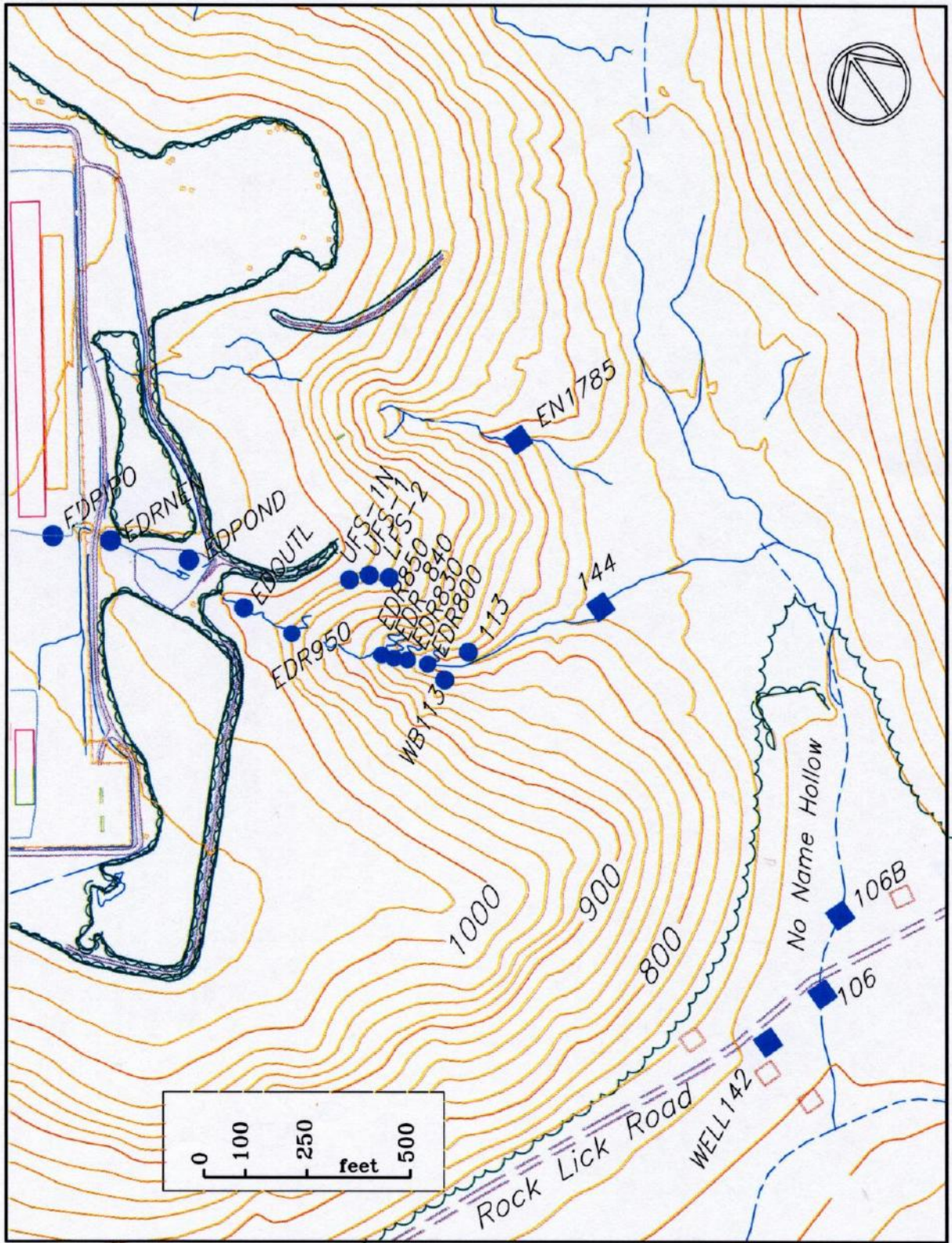


Figure 4. East Drain Hillside surface-water sampling locations.

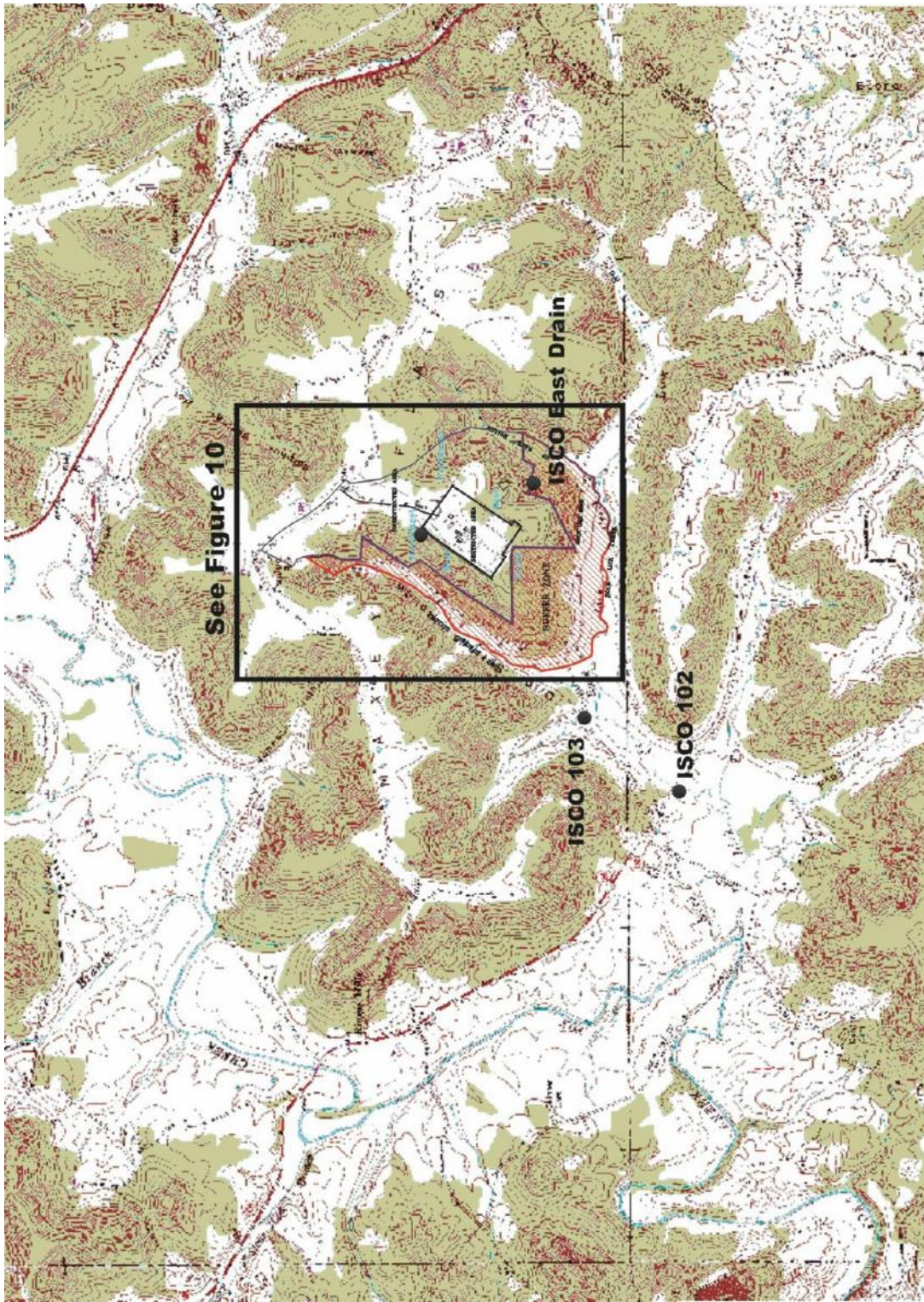


Figure 5. Automated surface water sampling locations (ISCO East Drain = EDRN)

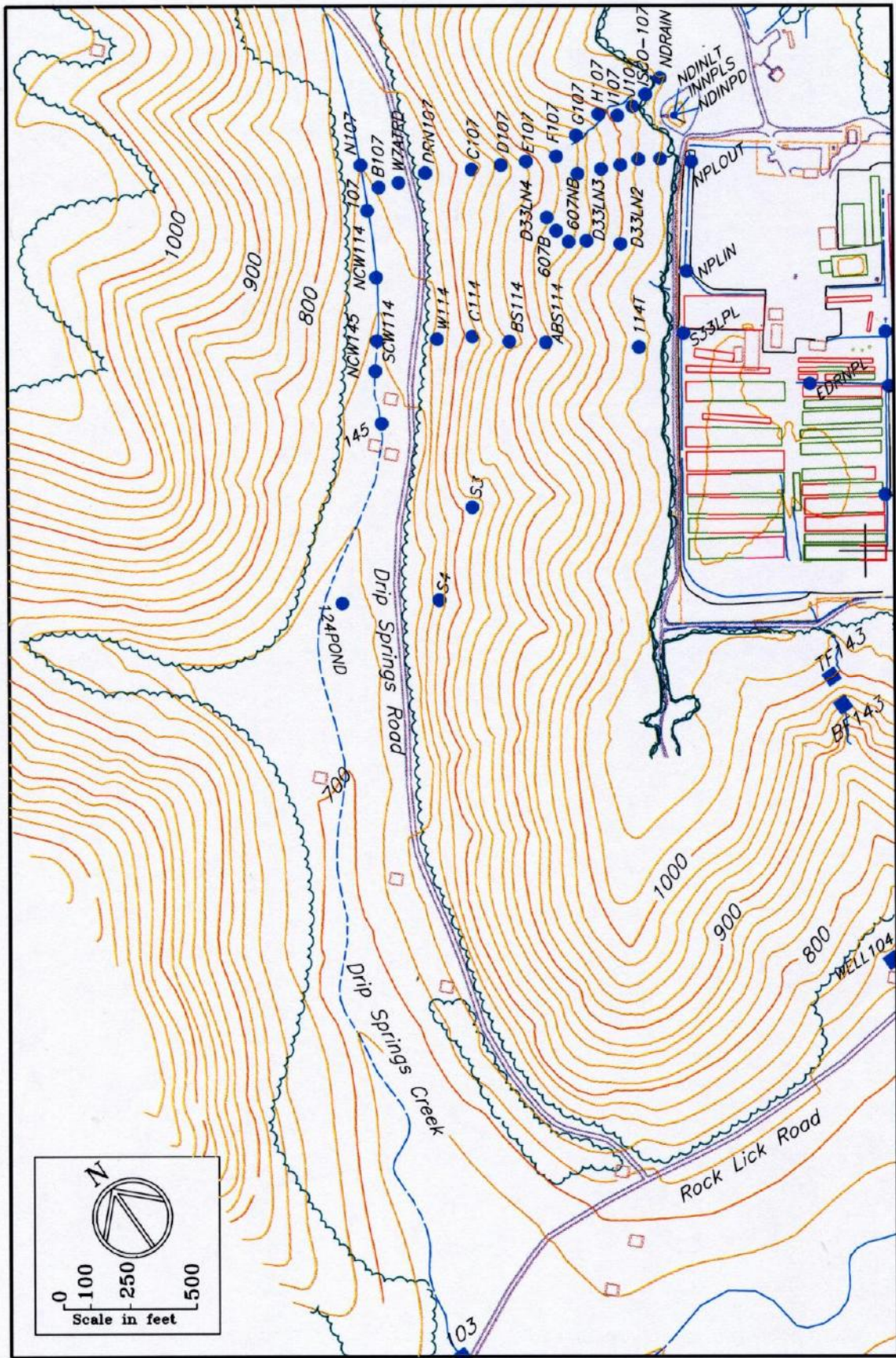


Figure 6. West Hillside surface-water sampling locations.

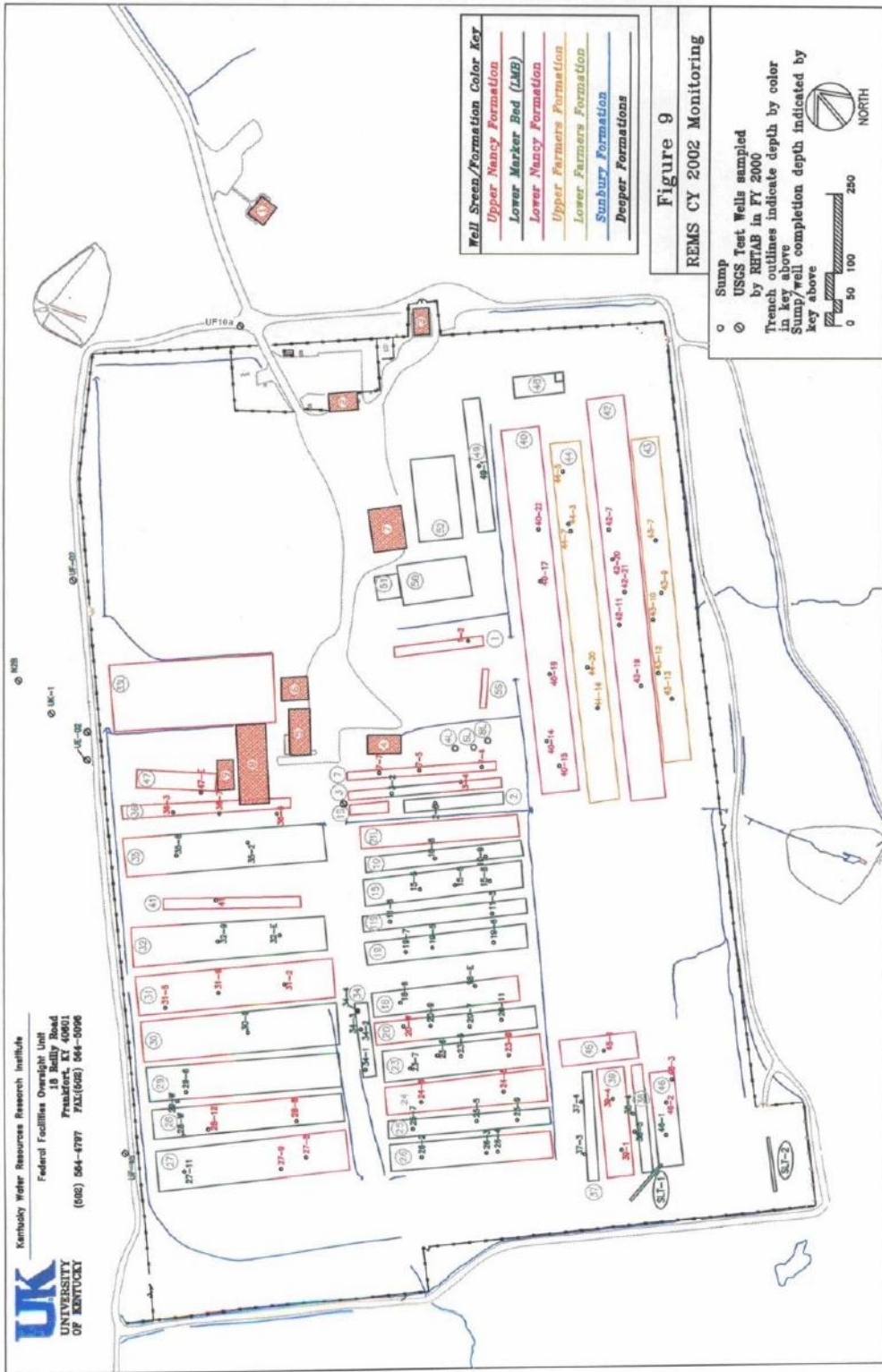


Figure 7. USGS Test Well Sampled in CY 2007

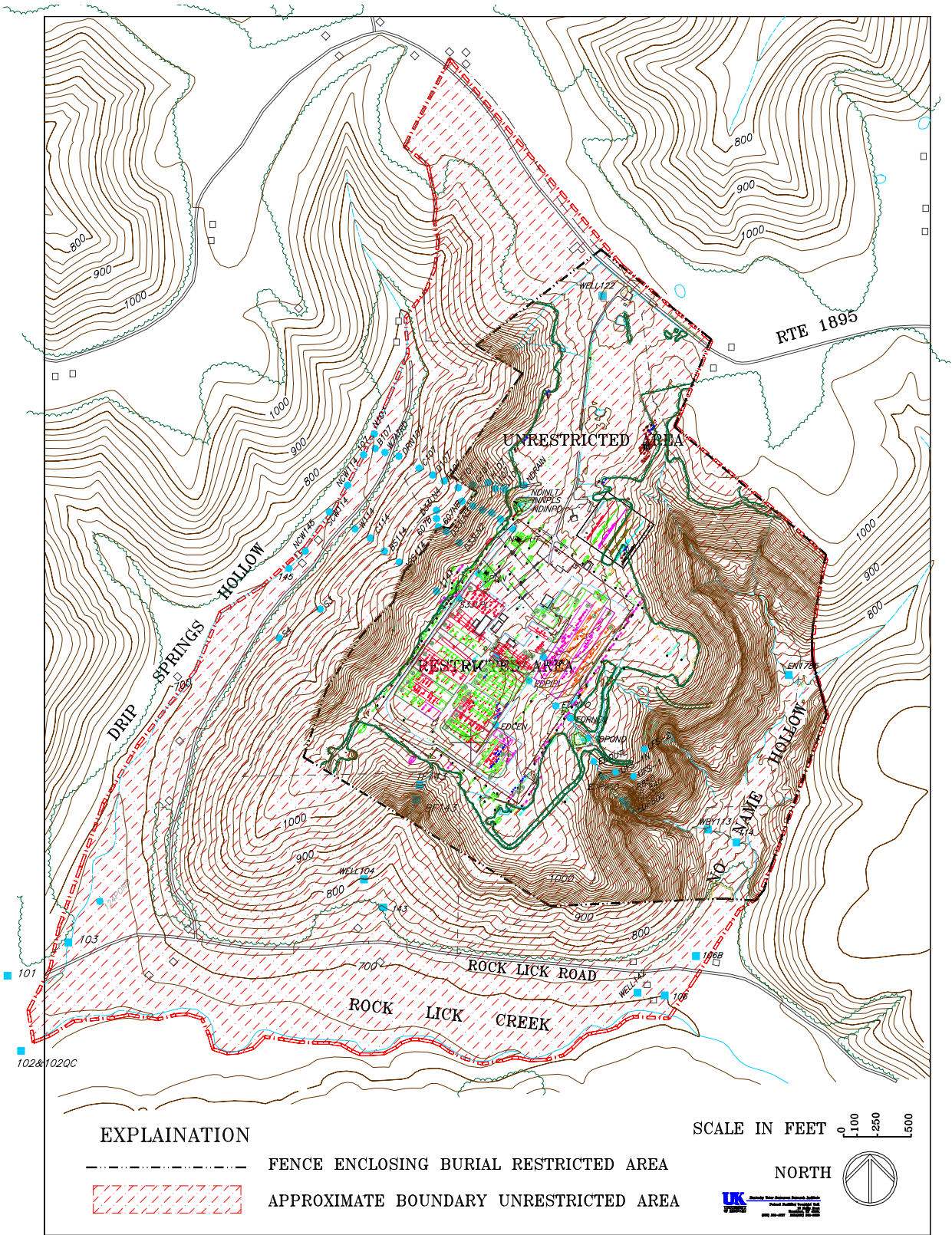


Figure 8. Maxey Flats Nuclear Disposal Site Area Map.

Appendix 5 - Maxey Flats Data Summaries