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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261 / RENEWED LICENSE NO. DPR-23

**RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT - 2013**

Ladies and Gentlemen:

In accordance with the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2, Technical Specifications, Section 5.6.2, "Annual Radiological Environmental Operating Report," enclosed is the Radiological Environmental Operating Report for the period January 1, 2013, through December 31, 2013.

If you have any questions concerning this report, please contact W. Richard Hightower, Manager - Nuclear Regulatory Affairs, at (843) 857-1329.

Sincerely,

R. Michael Glover  
Director - Site Operations, Robinson

RMG/mjp

Enclosure

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*TEQS  
NRR*

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261 / RENEWED LICENSE NO. DPR-23

**ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT – 2013**



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# **ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT**

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**DUKE ENERGY PROGRESS, INC.**

**H. B. ROBINSON STEAM ELECTRIC PLANT  
Unit No. 2**

**2013**



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**LIST OF ACRONYMS USED IN THIS TEXT** *(in alphabetical order)*

A	Annually
AR	Air Radioiodine/ Air Cartridge
AP	Air Particulate
AV	Aquatic Vegetation
BLV	Broadleaf Vegetation
C	Control
CR	Condition Report - Corrective Action Program
DEHNR	Department of Environmental Health and Natural Resources
ERA	Environmental Resource Associates
EZA	Eckert & Ziegler Analytics
FI	Fish
FP	Food Product
GPS	Global Positioning System
GW	Ground Water
I	Indicator
IR	Inner Ring - TLDs
ISFSI	Independent Spent Fuel Storage Installation
HBRSEP or RNP	H. B. Robinson Steam Electric Plant, Unit No. 2
HEEC	Harris Energy and Environmental Center
LLD	Lower Limit of Detection
M	Monthly
MDA	Minimum Detectable Activity
mrem	Millirem
NIST	National Institute of Standards and Technology
NRC	Nuclear Regulatory Commission
ODCM	Off-Site Dose Calculation Manual
OR	Outer Ring - TLDs
pCi/kg	picocurie per kilogram
pCi/l	picocurie per liter
pCi/m <sup>3</sup>	picocurie per cubic meter
PIP	Problem Investigation Program
Q	Quarterly
REMP	Radiological Environmental Monitoring Program
RNP or HBRSEP	H. B. Robinson Steam Electric Plant, Unit No. 2
SA	Semiannually
SB	Sediment – Bottom
SS	Sediment – Shoreline
SI	Special Interest - TLDs
SW	Surface Water
TECH SPECS	Technical Specifications
TLD	Thermoluminescent Dosimeter
μCi/ml	microcurie per milliliter
W	Weekly

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# 1.0 EXECUTIVE SUMMARY

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The H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP) is operated by Duke Energy Progress, Inc. under a license granted by the Nuclear Regulatory Commission (NRC). Provisions of the Nuclear Regulatory Commission's Regulatory Guide 4.8, HBRSEP Technical Specifications, and the HBRSEP Off-Site Dose Calculation Manual (ODCM) establish the requirements of the Radiological Environmental Monitoring Program (REMP). This report describes the HBRSEP REMP and the program results for January 1, 2013, through December 31, 2013.

Included in the report are the identification of sampling locations, descriptions of environmental sampling and analysis procedures, comparisons of present environmental radioactivity levels and pre-operational environmental data, analysis of trends in environmental radiological data as potentially affected by plant operations, and a summary of environmental radiological sampling results. Quality assurance practices, sampling deviations, unavailable samples, and program changes are also discussed. Concentrations observed in the environment in 2013 for plant related radionuclides were generally within the ranges of concentrations observed in the past. Inspection of the data showed that radioactivity concentrations were as expected and all positively identified measurements attributable to plant operations were within limits as specified in the HBRSEP ODCM.

Monitoring results for environmental media are summarized as follows:

- Air-monitoring results are lower than the concentrations of radioactivity from pre-operation monitoring. These observations are also consistent with past operational data and control data other than during the timeframe of fallout from the 2011 Japan earthquake and tsunami which triggered the Fukushima Dai-ichi nuclear power plant incident.
- Milk monitoring has not been conducted due to the unavailability of milk samples in the area since July 17, 1998, when the dairy ceased operation. Milk sampling will resume if a new sample location is identified. Broadleaf sampling is conducted, since no milk animals are located within five miles of the plant in any sector.
- Terrestrial vegetation includes broadleaf vegetation and food products. Results indicate detectable concentrations of Cs-137 in both the indicator and control locations for broadleaf vegetation with comparable results. The Cesium-137 concentrations were also comparable to previous years. No other gamma by-product/plant-related activity was detected in any samples, except for K-40 and other naturally occurring gamma activity. Sampling of miscellaneous food products (non-leafy) in the vicinity of the site is conducted when leafy vegetables are not being grown. The concentrations identified were comparable to previous years' data.

- Aquatic organism surveillances include fish and aquatic vegetation. Fish samples revealed detectable concentrations of Cs-137 activity in both indicator and control locations. No other gamma by-product/plant-related activity was detected in any fish sample, except for K-40 and other naturally occurring gamma activity. The concentrations observed are consistent with previous years' data. The aquatic vegetation is used for long term trending and there is no dose contribution to the public.
- Surface water results indicate no by-product/plant-related gamma activity in 2013. Surface water (non-drinking water) results indicate that the surface water from Lake Robinson shows the presence of tritium, which is attributed to plant operation; but is well below the drinking water limit (20,000 pCi/Liter) and the EPA reportable non-drinking water limit (30,000 pCi/Liter). The tritium concentrations observed are not irreversible to the environment due to plant operations (See Figure 3.2-1) and are consistent with previous years' data. Refer to Section 3.0 Interpretations of Results.
- Ground water results show the presence of tritium; however, the results are well below the drinking water limit (20,000 pCi/Liter) and the EPA reportable non-drinking water limit (30,000 pCi/Liter). Refer to Section 3.0 Interpretations of Results.
- Sediment surveillance includes both shoreline and bottom sediment. The shoreline sediment gamma analyses identified naturally occurring gamma activity and no gamma by-product/plant-related activity was detected in any shoreline sediment sample collected in 2013. These samples are used to calculate groundplane dose to the public. During 2013, bottom sediment results indicated the presence of Cs-137 at concentrations consistent with previous years. Bottom sediment is used for long term trending and there is no public dose associated with these samples.
- External radiation dose showed no measurable change from pre-operational data.

The continued operation of HBRSEP has not significantly contributed radiation or the presence of radioactivity in the environmental media monitored. The measured concentrations of radioactivity are well within applicable regulatory limits.



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## 2.0 INTRODUCTION

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### 2.1 SITE DESCRIPTION AND SAMPLE LOCATIONS

Duke Energy's H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP) consists of a pressurized water reactor with a design rating of 800 MWe (Megawatts electric). The site is shared with a pulverized coal unit (Unit No.1), which established commercial operation in 1960. Unit 1 is now offline and is scheduled to be decommissioned. Commercial production was initiated by Unit No. 2 on March 7, 1971. The HBRSEP is located in Darlington County, South Carolina. The site is along state route 151 approximately five (5) miles northwest of Hartsville, South Carolina. The site is also approximately twenty five (25) miles northwest of Florence, South Carolina.

Lake Robinson is adjacent to the plant and is the source of cooling water. The lake was impounded during the construction of Robinson Unit No.1 (coal fired). The lake is fed by Black Creek and is approximately 2,250 acres in area. The plant intake is at the southern portion of the lake near the dam. The discharge is to a canal which conveys the cooling water to a point 4.2 miles north of the plant, where it returns to Lake Robinson.

The local economy supports primarily industrial and agricultural contributions. Fishing, boating, and swimming are popular activities on Lake Robinson and other nearby lakes. These activities contribute to the radiological pathways by consumption of fish and immersion related to swimming and boating. Consumption of milk and food products contributes to the ingestion pathway. No milk animals are located within five miles of the plant in any sector at this time, so broadleaf sampling is conducted to simulate the milk ingestion pathway.

Although the contribution to background radiation is small, Duke Energy Progress, Inc. has established this program to measure the exposure pathways to man. An exposure pathway describes the source of the radiological exposure. The primary forms of potential radiological emissions from the plant are airborne and liquid discharge. The following pathways are monitored: external dose, ingestion of radioactive materials, and the inhalation of radioactive material. Specific methods and different environmental media are required to assess each pathway.

Sampling locations are chosen based upon meteorological factors, pre-operational monitoring, and results of the land use surveys. A number of locations are selected as controls. Control stations are selected because they are very unlikely to be affected by the operation of the plant. Figures 2.1-1 and 2.1-2 are maps depicting the HBRSEP Thermoluminescent Dosimeter (TLD) monitoring locations and the sampling locations. The location numbers shown on these maps correspond to those listed in Tables 2.1-A and 2.1-B.

## **2.2 SCOPE AND REQUIREMENTS OF THE REMP**

The Radiological Environmental Monitoring Program (REMP) was established in 1973 at HBRSEP. Radiation and radioactivity in various environmental media have been monitored for 40 years. Monitoring is also provided for control locations, which would not be impacted by operations of the HBRSEP. Using these control locations and data collected prior to operation allows comparison of data collected at locations near the HBRSEP which could potentially be impacted by its operations. The preoperational program provides data on the existing environmental radioactivity levels for the site and vicinity which may be used to determine whether increases in environmental levels are attributable to the station. The operational program provides surveillance and backup support of detailed effluent monitoring which is necessary to evaluate the significance, if any, of the contributions to the existing environmental radioactivity levels that result from station operation.

This monitoring program is based on NRC guidance as reflected in the HBRSEP Off-Site Dose Calculation Manual (ODCM), with regards to sample media, sampling locations, sampling frequency and analytical sensitivity requirements. Indicator and control locations were established for comparison purposes to distinguish radioactivity of plant origin from natural or other "man-made" environmental radioactivity. The environmental monitoring program also verifies projected and anticipated radionuclide concentrations in the environment and related exposures from releases of radionuclides from HBRSEP. This program satisfies the requirements of Section IV.B.2 of Appendix I to 10 CFR 50 and provides surveillance of all appropriate critical exposure pathways to man and protects vital interests of the company, public and state and federal agencies concerned with the environment. Reporting levels for activity found in environmental samples are listed in Table 2.2-A. Table 2.2-B lists the REMP analysis and frequency schedule.

The Annual Land Use Census, required by the HBRSEP Off-Site Dose Calculation Manual (ODCM), is performed to ensure that changes in the use of areas at or beyond the site boundary are identified and that modifications to the REMP are made if required by changes in land use. This census satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR 50. Results are shown in Table 3.12.3.

Participation in an interlaboratory comparison program is performed in fulfillment of HBRSEP ODCM Operational Requirements. The comparison program provides for independent checks on the precision and accuracy of measurements of radioactive material in REMP sample matrices. Such checks are performed as part of the quality assurance program for environmental monitoring in order to demonstrate that the results are valid for the purposes of Section IV.B.2 of Appendix I to 10 CFR 50. A summary of the results obtained as part of this comparison program are in Section 4 of this annual report.

## **2.3 STATISTICAL AND CALCULATIONAL METHODOLOGY**

### **2.3.1 ESTIMATION OF THE MEAN VALUE**

There was one (1) basic statistical calculation performed on the raw data resulting from the environmental sample analysis program. The calculation involved the determination of the mean value for the indicator and the control samples for each sample medium. The mean is a widely used statistic. This value was used in the reduction of the data generated by the sampling and analysis of the various media in the Radiological Environmental Monitoring Program. "Net activity (or concentration)" is the activity (or concentration) determined to be present in the sample. No "Minimum Detectable Activity", "Lower Limit of Detection", "Less Than Level", or negative activities or concentrations are included in the calculation of the mean. The following equation was used to estimate the mean (reference 6.8):

$$\bar{x} = \frac{\sum_{i=1}^N x_i}{N}$$

Where:

$\bar{x}$  = estimate of the mean,

i = individual sample,

N = total number of samples with a net activity (or concentration),

$x_i$  = net activity (or concentration) for sample i.

### **2.3.2 LOWER LIMIT OF DETECTION AND MINIMUM DETECTABLE ACTIVITY**

The Lower Limit of Detection (LLD), and Minimum Detectable Activity (MDA) are used throughout the REMP.

**LLD** - The LLD, as defined in the ODCM as the smallest concentration of radioactive material in a sample that will yield a net count, above the system background, that will be detected with 95% probability with only 5% probability of falsely concluding that a blank observation represents a "real" signal. The LLD is an *a priori* (before the fact) lower limit of detection. The actual LLD is dependent upon the standard deviation of the background counting rate, the counting efficiency, the sample size (mass or volume), the radiochemical yield and the radioactive decay of the sample between sample collection and counting. The "required" LLD's for each sample medium and selected radionuclides are given in the ODCM and are listed in Table 2.2-C.

**MDA** - The MDA is the net counting rate (sample after subtraction of background) that must be surpassed before a sample is considered to contain a scientifically measurable amount of a radioactive material exceeding background amounts. The MDA is calculated using a sample background and may be thought of as an "actual" LLD for a particular sample measurement.

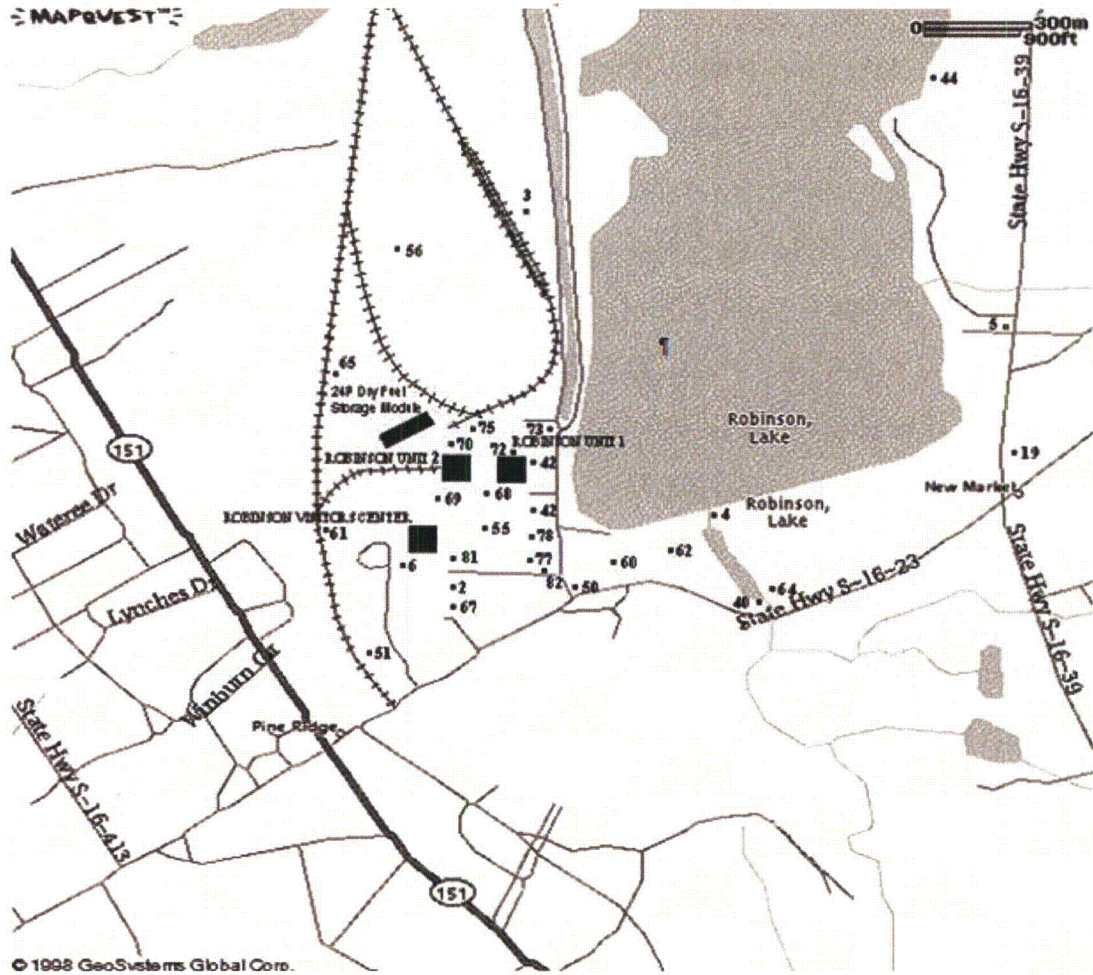
### **2.3.3 TREND IDENTIFICATION**

One of the purposes of an environmental monitoring program is to determine if there is a buildup of radionuclides in the environment due to the operation of the nuclear station. Visual inspection of tabular or graphical presentations of data (including preoperational) is used to determine if a trend exists. A decrease in a particular radionuclide's concentration in an environmental medium does not indicate that reactor operations are removing radioactivity from the environment but that reactor operations are not adding that radionuclide to the environment in quantities exceeding the preoperational level and that the normal removal processes (radioactive decay, deposition, resuspension, etc.) are influencing the concentration.

Substantial increases or decreases in the amount of a particular radionuclide's release from the nuclear plant will greatly affect the resulting environmental levels; therefore, a knowledge of the release of a radionuclide from the nuclear plant is necessary to completely interpret the trends, or lack of trends, determined from the environmental data. Factors that may affect environmental levels of radionuclides include prevailing weather conditions (periods of drought, solar cycles or heavier than normal precipitation), construction in or around either the nuclear plant or the sampling location, and addition or deletion of other sources of radioactive materials (such as the 1986 Chernobyl accident and the 2011 Japan earthquake and tsunami which triggered the Fukushima Dai-ichi nuclear power plant incident). Some of these factors may be obvious while others are sometimes unknown. Therefore, how trends are identified will include some judgment by plant personnel.

Figure 2.1-1

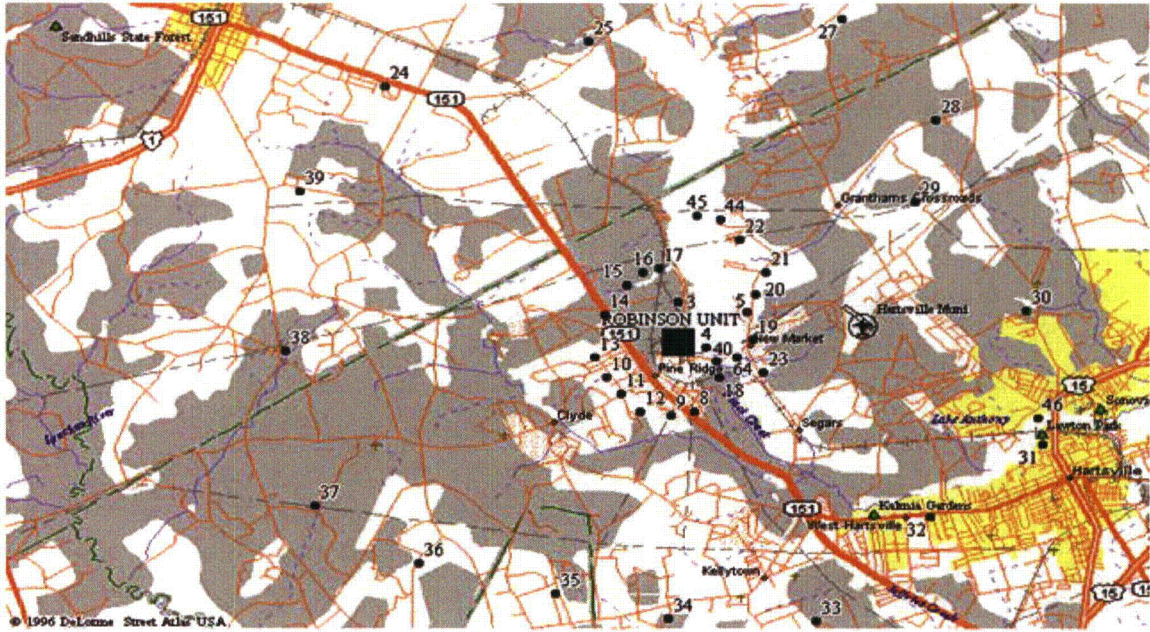
Radiological Environmental Sampling Locations  
(Near Plant)



Sample Locations not shown include: 1, 7 - 18, 20 - 39, 41, 45 - 47, 49, 52, 54, 57, 58, 66, 71, 76, and 79.

Figure 2.1-2

Radiological Environmental Sampling Locations  
(Distant from Plant)



Sample Locations not shown include: 1, 2, 6, 7, 26, 41, 42, 47 (varies), 50 - 52, 54 - 58 (varies), 60 - 62, 73, 75 - 79, and 81 - 82.

TABLE 2.1-A

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (HBRSEP)  
 RADIOLOGICAL MONITORING PROGRAM SAMPLING LOCATIONS

Site #	Type*	Location Description**	AR* & AP*	SW*	SS*	SB*	AV*	FP <sup>(a)</sup> *	Fish (FI)*	BLV <sup>(b)</sup> *	GW*
1	C	24.4 miles ESE Florence, S.C.	W/Q								
2	I	0.2 miles S Information Center	W/Q								
3	I	0.5 miles N Microwave Tower	W/Q								
4	I	0.4 miles ESE Spillway	W/Q								
5	I	0.9 miles ENE East shore of lake near Johnson's Landing	W/Q								
6	I	0.2 miles SSW Information Center	W/Q								
7	I	6.4 miles ESE CP&L facility on RR Avenue, Hartsville	W/Q								
40	I	0.6 miles ESE Black Creek at Old Camden Road (S-16-23) - Lake Robinson		M							
41	C	8.0 miles N Black Creek at US Hwy 1		M							
41	C	7.2 miles NNW Black Creek (upstream)				A	A				
42	I	Unit 1 Deep Wells									Q
44	I	1.6 miles NNE East shore of lake, Shady Rest Club			SA						
45	I	Site varies within Lake Robinson				A	A		SA		
46	I	Site varies within Prestwood Lake				A	A		SA		
47	C	Control station, Any lake not influenced by plant discharge							SA		
49	C	10.0 miles W or greater than 5 miles from plant						A <sup>(a)</sup>			
50	I	SSE Close to Site Boundary								M <sup>(b)</sup>	
51	I	SSW Close to Site Boundary								M <sup>(b)</sup>	
52	C	10 miles W near Bethune								M <sup>(b)</sup>	
54	I	10.1 miles E Auburndale Plantation (if irrigating from Black Creek)						A <sup>(a)</sup>			
55	I	0.2 miles SSE South of West Settling Pond	W/Q								
57	I	Ash Pond		M							
57	I	Ash Pond Shore			SA						
58	I	Site varies from plant						A <sup>(a)</sup>			
60	I	0.2 miles SE Robinson Picnic Area	W/Q								
61	I	0.3 miles WSW West Parking lot near RR tracks	W/Q								
62	I	SE Close to Site Boundary								M <sup>(b)</sup>	
64	I	0.6 miles SE Artesian Well									Q
66	I	Black Creek btwn Prestwood Lake discharge & upstream of Sonoco Spray Farm (downstream)		M		A	A				
67	I	S Close to Site Boundary								M <sup>(b)</sup>	
68	I	Well A Btwn Unit 1 Switchyard & breakroom									Q
69	I	Well B Behind the Training Building									Q
70	I	Well C Btwn O&M Building & Fab Shop									Q
71	I	0.87 miles NNW (MW-03A) Btwn Ash Pond & RR tracks									Q
72	I	0.10 miles E (MW-06) 20 ft from FP/FH 7 fire hydrant & Unit 1 North Deep Well Pump									Q
73	I	0.11 miles ENE (MW-13) Btwn Discharge Canal & Unit 1 Stand Alone Fuel Oil Tanks									Q
75	I	0.05 miles NE (PSW-02) By Unit 1 boundary Fence to Unit 2 across paved rd. from Hydrogen Gas Tanks									
76	I	0.49 miles N (PSW-03) NE corner of MET Tower Station									Q
77	I	0.25 miles SSE (TS-01B) By entrance road to Unit 1									Q
78	I	0.17 miles SSE (TS-02C) NE corner by East Settling Pond influent by fence									Q
79	I	1.0 miles N (TS-07C) S corner by cove & Discharge Canal									Q
81	I	0.19 miles SSE (TS-17B) W of West Settling Pond across paved road									Q
82	I	0.3 miles SSE (PDW-01) By entrance road to Unit 1									Q

(a) During Harvest/Growing Season

(b) When Available

\* Refer to List of Acronyms Used in this Text in Table of Contents

\*\*GPS data reflect approximate accuracy to within 2-5 meters. GPS field measurements were taken as close as possible to the item of interest.

**TABLE 2.1-B**

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (HBRSEP)  
RADIOLOGICAL MONITORING PROGRAM SAMPLING LOCATIONS (TLD SITES)**

C	Control
IR	Inner Ring
OR	Outer Ring
SI	Special Interest

Site #	Measure Type	Location*	Distance (miles) <sup>1</sup>	Sector	Site #	Measure Type	Location*	Distance (miles) <sup>1</sup>	Sector
1	C	Florence, SC	24.4	ESE	23	IR	New Market Road (#S-16-39)	1.0	ESE
2	IR	Information Center <sup>1,2</sup>	0.2	S	24	OR	Sowell Road (#S-13-711)	4.6	NW
3	IR	Microwave Tower	0.5	N	25	OR	Lake Robinson Road (#S-13-346)	4.0	NNW
4	IR	Spillway	0.4	ESE	26	OR	Lake Robinson Road (#S-13-346)	5.0	N
5	IR	East shore of lake near Johnson's Landing	0.9	ENE	27	OR	Prospect Church Road (#S-13-763)	5.4	NNE
6	IR	Information Center <sup>1,2</sup>	0.2	SSW	28	OR	New Market Road (#S-13-39)	4.3	NE
7	OR	CP&L Facility on RR Avenue, Hartsville	6.4	ESE	29	OR	Ruby Road (#S-16-20)	4.0	ENE
8	IR	Transmission right-of-way	0.8	SSE	30	OR	Ruby Road (#S-16-20)	4.4	E
9	IR	Transmission right-of-way	1.0	S	31	OR	Lakeshore Drive	4.6	ESE
10	IR	Clyde Church of God	1.0	WSW	32	OR	Transmission right-of-way	4.0	SE
11	IR	Old Camden Road	1.0	SW	33	OR	Bay Road (#S-16-493)	4.5	SSE
12	IR	Off of Old Camden Road	1.2	SSW	34	OR	Kellybell Road (#S-16-772)	4.7	S
13	IR	Corner of Saluda and Sandpit Roads	0.7	W	35	OR	Kelly Bridge Road (#S-31-51)	4.5	SSW
14	IR	First Baptist Church of Pine Ridge	0.8	WNW	36	OR	Kingston Drive	5.0	SW
15	IR	Transmission right-of-way	0.7	NW	37	OR	Pine Cone Road	5.0	WSW
16	IR	South side of Darlington Co. I.C. Turbine Plant	1.0	NNW	38	OR	Union Church Road	4.9	W
17	IR	Darlington Co. Plant emergency fire pump	1.2	N	39	OR	King's Pond Road	5.1	WNW
18	IR	Near Old Black Creek RR trestle	0.7	SE	55	IR	South of the West Settling Pond	0.2	SSE
19	IR	Old Camden Road (#S-16-23)	1.0	E	56	IR	North of the center of the 7P-ISFSI <sup>1,2</sup>	0.4	NNW
20	IR	New Market Road (#S-16-39)	1.0	ENE	61	IR	West Parking lot near RR tracks <sup>2</sup>	0.3	WSW
21	IR	New Market Road (#S-16-39)	1.4	NE	65	IR	Northwest of the 24P-ISFSI <sup>2</sup>	0.3	WNW
22	IR	Shady Rest entrance off of Cloverdale Drive	1.7	NNE					

1 Required for monitoring of the 7P-ISFSI

2 Required for monitoring of the 24P-ISFSI

\* GPS data reflect approximate accuracy to within 2-5 meters. GPS field measurements were taken as close as possible to the item of interest.



**TABLE 2.2-A**

**REPORTING LEVELS FOR RADIOACTIVITY  
CONCENTRATIONS IN ENVIRONMENTAL SAMPLES**

Analysis	Water (pCi/liter)	Airborne (pCi/m <sup>3</sup> )	Fish (pCi/kg-wet)	Milk (pCi/liter)	Food Products (pCi/kg-wet)
H-3	20,000 <sup>(a)</sup>	----	----	----	----
Mn-54	1,000	----	30,000	----	----
Fe-59	400	----	10,000	----	----
Co-58	1,000	----	30,000	----	----
Co-60	300	----	10,000	----	----
Zn-65	300	----	20,000	----	----
Zr-Nb-95	400	----	----	----	----
I-131	2 <sup>(b)</sup>	0.9	----	3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba-La-140	200	----	----	300	----

(a) For drinking water samples. This is 40 CFR Part 141 value. If no drinking water pathway exists, a value of 30,000 pCi/liter may be used.

(b) If no drinking water pathway exists, a value of 20 pCi/liter may be used.

“----” represents no specified limits

**TABLE 2.2-B**

**REMP ANALYSIS FREQUENCY**

Sample Medium	Analysis Schedule	Gamma Isotopic	Tritium	Low Level I-131	Gross Beta	TLD
Air Radioiodine	Weekly	X				
Air Particulate	Weekly				X	
	Quarterly	X				
Direct Radiation	Quarterly					X
Surface Water	Monthly Composite	X	X			
Ground Water	Quarterly	X	X			
Ground Water (#68)	Quarterly	X	X	X		
Ground Water (#82)	Quarterly	X	X	X	X	
Bottom Sediment	Annually	X				
Shoreline Sediment	Semiannually	X				
Fish	Semiannually	X				
Aquatic Vegetation	Annually	X				
Broadleaf Vegetation	Monthly <sup>(a)</sup>	X				
Food Products	Annually <sup>(b)</sup>	X				

(a) When Available

(b) At harvest

**TABLE 2.2-C**

**LOWER LIMITS OF DETECTION (LLD)<sup>(a)</sup>**

Analysis	Water (pCi/liter)	Airborne (pCi/m <sup>3</sup> )	Fish (pCi/kg-wet)	Milk (pCi/liter)	Food Products (pCi/kg-wet)	Sediment (pCi/kg-dry)
Gross Beta	----	0.01	----	----	----	----
H-3	2000 <sup>(c)</sup>	----	----	----	----	----
Mn-54	15	----	130	----	----	----
Fe-59	30	----	260	----	----	----
Co-58, 60	15	----	130	----	----	----
Zn-65	30	----	260	----	----	----
Zr-Nb-95 <sup>(b)</sup>	15	----	----	----	----	----
I-131	1 <sup>(d)</sup>	0.07	----	1	60	----
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-La-140 <sup>(b)</sup>	15	----	----	15	----	----

(a) The LLD is defined in Section 2.3.2.

(b) The specified LLD applies to the daughter nuclide of an equilibrium mixture of the parent and daughter nuclides.

(c) If no drinking water pathway exists, a value of 3000 pCi/liter may be used.

(d) If no drinking water pathway exists, a value of 15 pCi/liter may be used.

“----” represents no specified limits

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## 3.0 INTERPRETATION OF RESULTS

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The following section depicts and explains the review of the REMP results conducted during 2013 for the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP) and fulfills the reporting requirements of Technical Specifications and HBRSEP ODCM. Review of all 2013 REMP analysis results was performed to identify changes in environmental levels as a result of HBRSEP operations. Sample data for 2013 was compared to preoperational and historical data.

Evaluation for significant trends was performed for radionuclides that are listed as required within HBRSEP ODCM. The radionuclides include: H-3, Mn-54, Fe-59, Co-58, Co-60, Zn-65, Zr-95, Nb-95, I-131, Cs-134, Cs-137, Ba-140 and La-140. HBRSEP ODCM addresses actions to be taken if radionuclides other than those required are detected in samples collected. The occurrences of these radionuclides could be the result of HBRSEP liquid effluents which contained the radionuclides.

The purpose of the REMP is to measure accumulation of radioactivity in the environment, to determine whether this radioactivity is the result of the operation of the HBRSEP, Unit No. 2, and to assess the potential dose to the off-site population based on the cumulative measurements of radioactivity of plant origin. Approximately 1,458 samples were collected from indicator and control locations and 1,578 analyses and measurements were made during 2013. Detectable radioactivity resulting from plant operation was found in 25 out of 36 indicator samples of surface water (Appendix B). Only the tritium activity measured in the surface water of Lake Robinson and in fish samples constituted a source of public exposure. The highest concentration of any plant related radionuclide releases to the environment was tritium in Lake Robinson at an average concentration of 3.136E+3 pCi/Liter. Using the methodology of Regulatory Guide 1.109 "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, dated October 1977," via fish consumption, is listed below. The maximum possible exposure to an individual from the evaporation of tritium in Lake Robinson using 2013 meteorology is 0.192 mrem/yr. to a child. Radioactivity in environmental samples attributed to plant operations in 2013 for which there is a potential dose pathway to the public is seen in Table 3.0-A.

<u>Age Group</u>	<u>2013 Dose (mrem)</u>
Adult	0.007
Teenager	0.005
Child	0.004

A change occurred in 2013 (end of March, first of April) in the analysis procedures, the analysis instrumentation, and the analysis laboratory due to the merger between Progress Energy and Duke Energy. The Harris Energy and Environmental Center (HE&EC) (Progress Energy's central laboratory) was subsequently decommissioned and all laboratory services were consolidated at the EnRad Laboratory in Huntersville, N.C.

Review of all 2013 data presented in this section supports the conclusion that there were no significant changes in environmental sample radionuclide concentrations of samples collected and analyzed from HBRSEP and surrounding areas that were attributable to plant operations. The radiological environmental data for 2013 indicates that radioactivity concentrations were not higher than expected and all positively identified measurements attributable to HBRSEP operations in 2013 were within limits as specified in the HBRSEP ODCM, thus presenting no significant impact on the environment or public health and safety. A statistical summary of all the HBRSEP data for 2013 has been compiled and summarized in Appendix B along with any plant-derived activity detected within the scope of the REMP.

**Table 3.0-A HBRSEP Potential Dose Pathway**

Environmental Media	Radionuclide	Location w/Highest Annual Mean	Activity and Occurrence	Maximum Individual Dose (mrem/yr)
Surface Water	H-3 (tritium)	Lake Robinson (SW-40)	3.136 pCi/L (12/12)	0.007 millirem/yr – Adult (from fish)
Surface Water	H-3 (tritium)	Lake Robinson (SW-40)	3,136 pCi/L (12/12)	0.192 millirem/yr – child (Evaporation from Lake Robinson using HBRSEP 2013 Meteorology Data)*

\*This is information supplied by Murray and Trettel, Inc. in their report "Impact of Tritium Release from Lake Robinson at the Robinson Nuclear Plant for 2013."

### **3.1 AIRBORNE RADIOIODINE AND PARTICULATES**

All 520 air cartridge/radioiodine (AC) samples from indicator and control stations had I-131 concentrations less than the ODCM LLD of 7.00E-2 pCi/m<sup>3</sup>. There are nine indicator sites for a total of 468 indicator samples and one control site for a total of 52 control samples during the 2013 collection year. The air samplers operated for a total of 99.63% availability for the 2013 year.

For the period of January 1, 2013, to December 31, 2013, the gross beta activity was detectable in all airborne particulate (AP) samples, with acceptable runtime, from the nine indicator locations and the control location. The 467 indicator samples had an average concentration of 1.82E-2 pCi/m<sup>3</sup>. Similar gross beta activities were observed at the control location in Florence, which had an average concentration of 1.74E-2 pCi/m<sup>3</sup> in 52 control samples. Figures 3.1-1 through 3.1-9 provide a graphic representation of the gross beta activity at the indicator locations compared to the control location for the year 2013. No plant-related gamma activity was observed for any air particulate filters analyzed during 2013. The natural gamma concentrations identified are typical of the natural environment and are not attributed to plant operations. Refer to Appendix C or Appendix D for deviations and unavailable samples in the 2013 collection year.

No plant-related gamma activity was detected in quarterly composite filter samples from either the indicator or control locations during 2013. HBRSEP ODCM LLDs and reporting levels for air particulates are contained in Section 2.0 in Table 2.2-C and 2.2-A respectively.

Figure 3.1-1

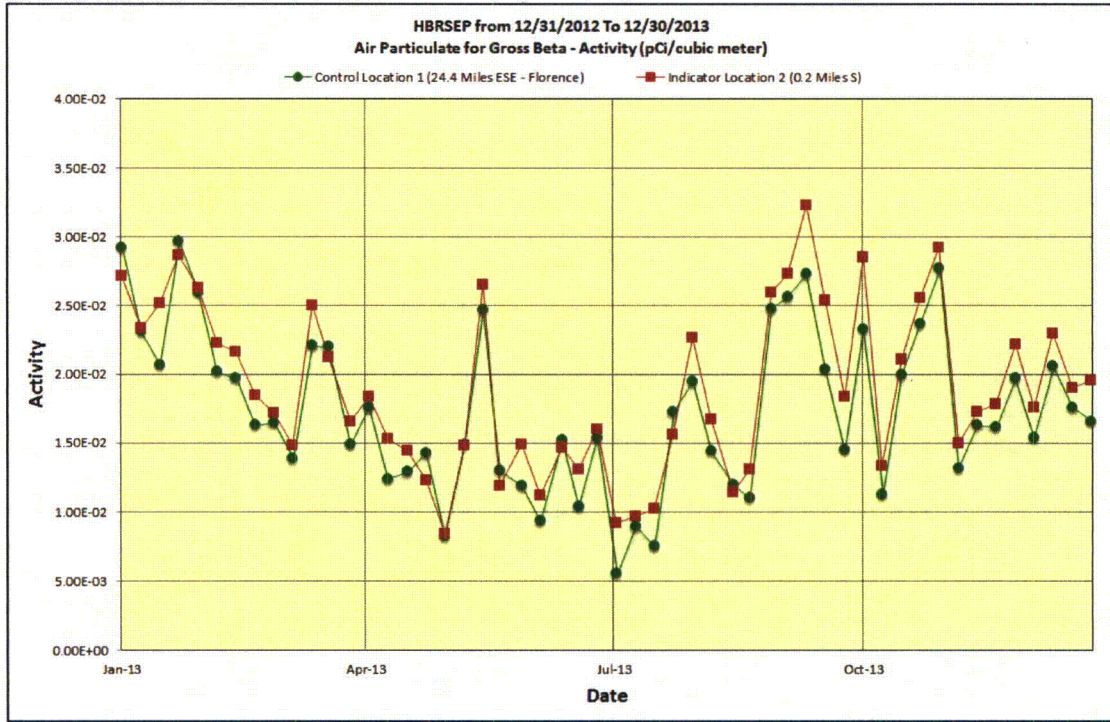


Figure 3.1-2

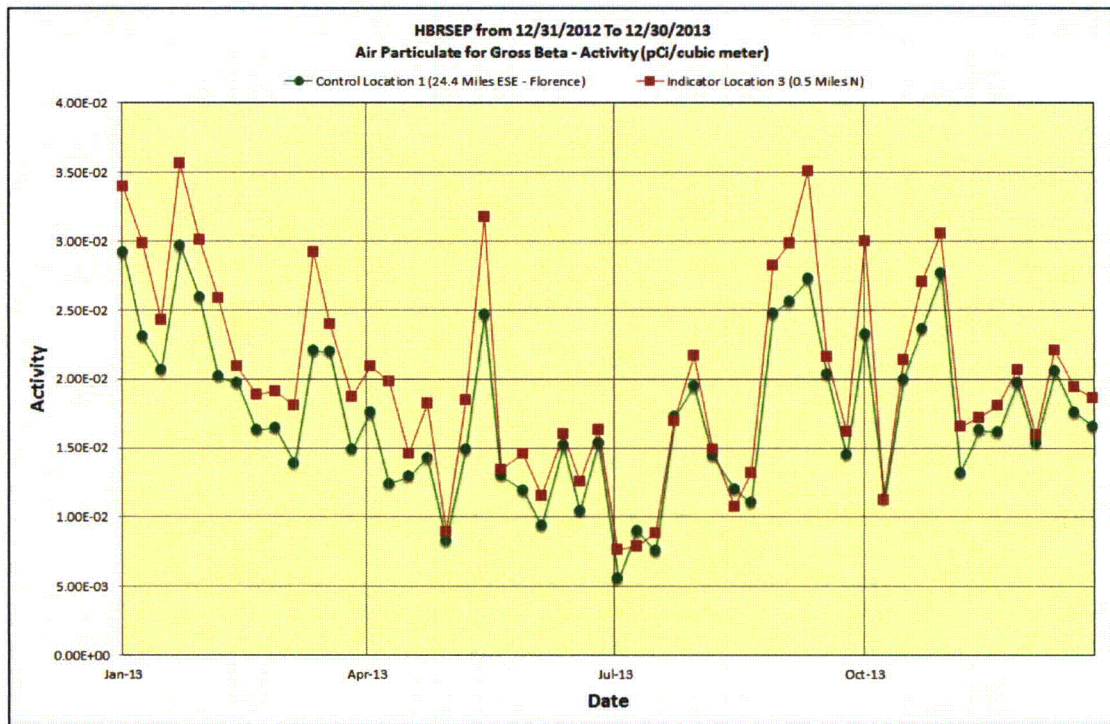


Figure 3.1-3

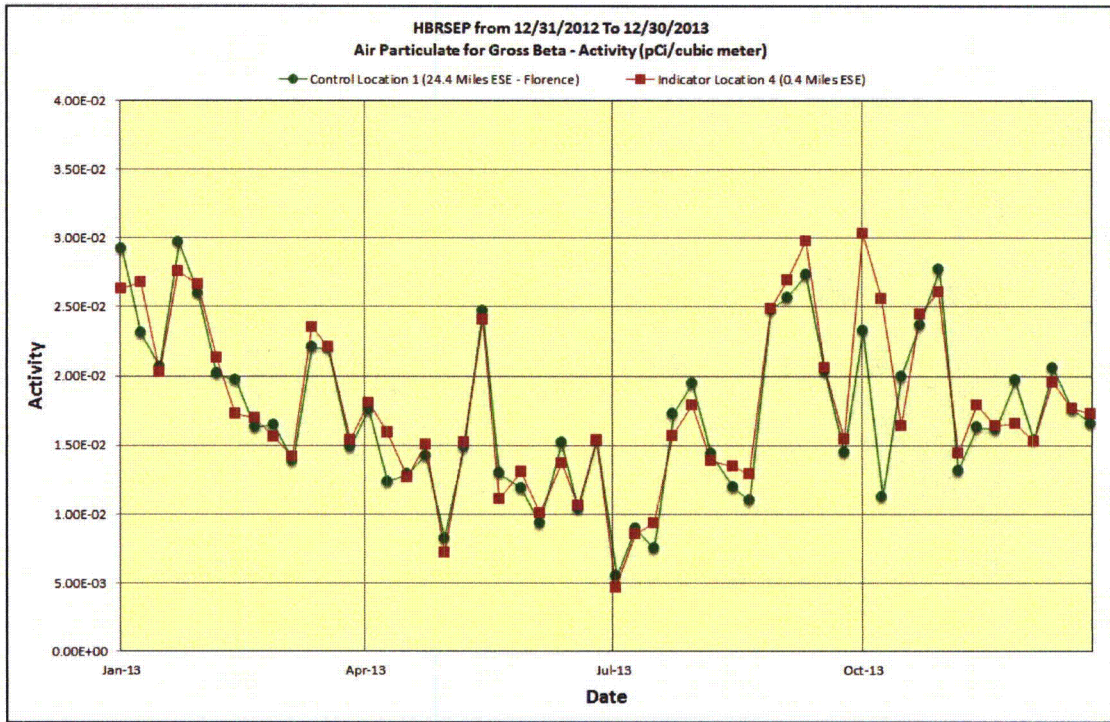


Figure 3.1-4

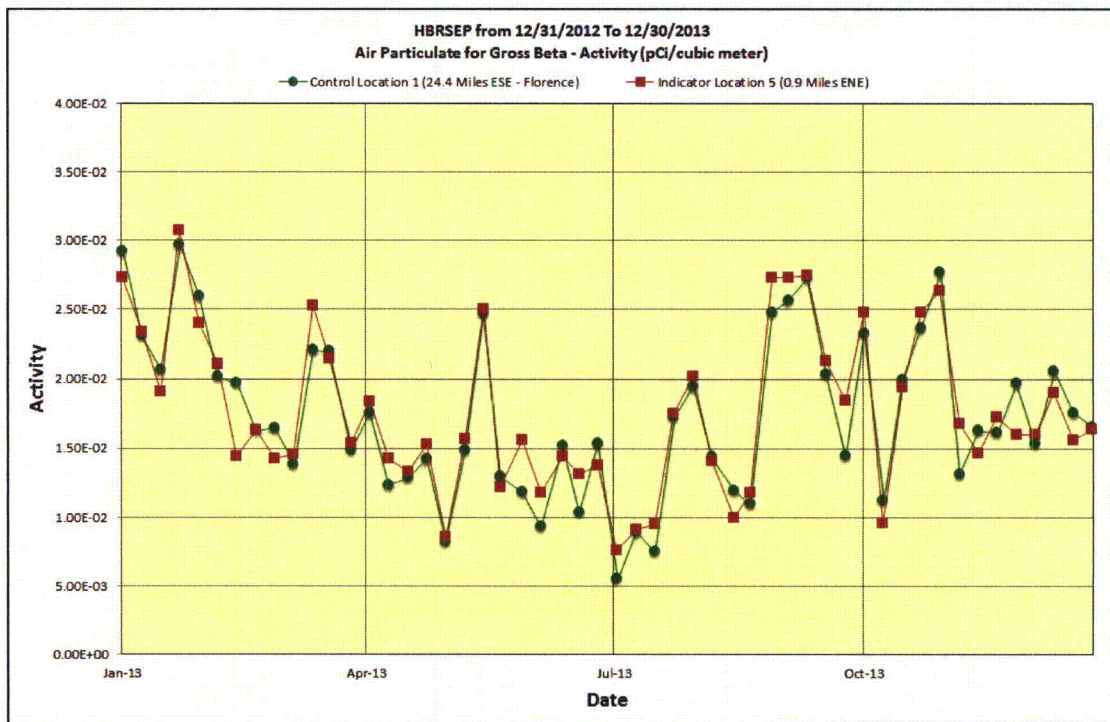


Figure 3.1-5

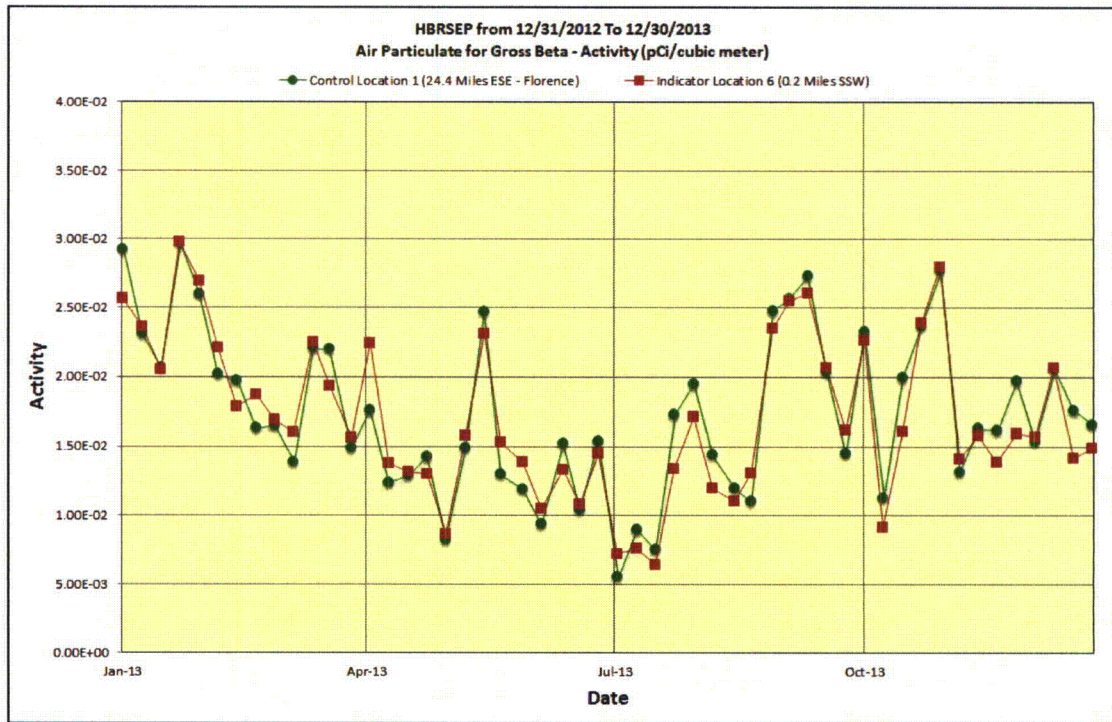


Figure 3.1-6

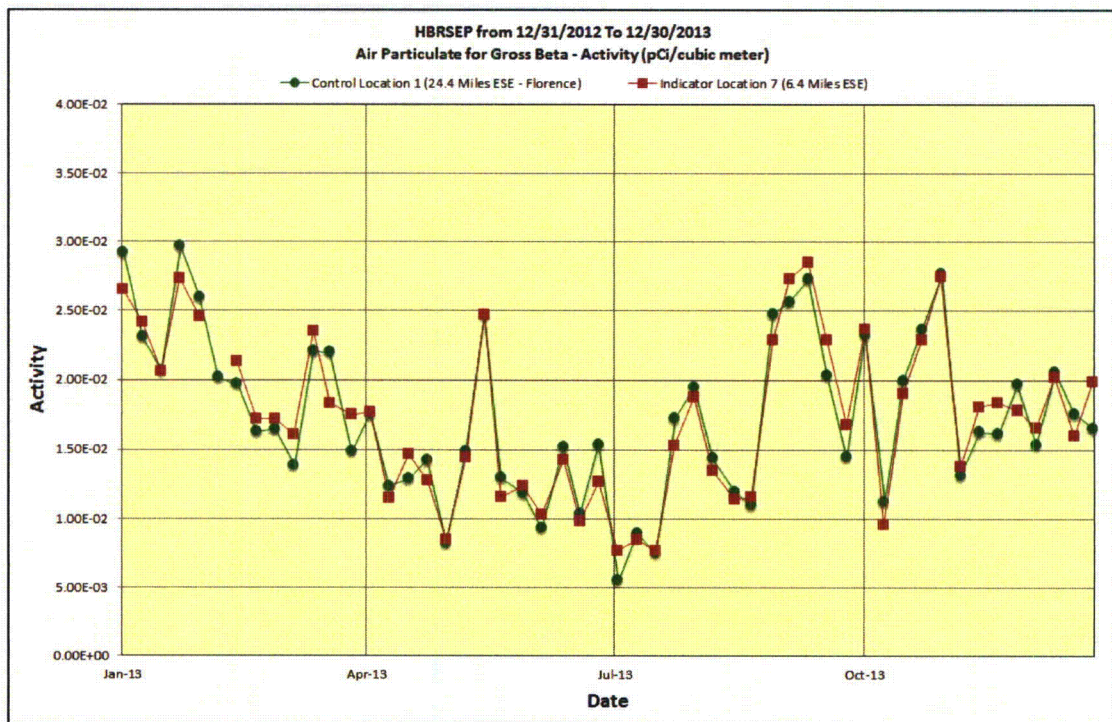


Figure 3.1-7

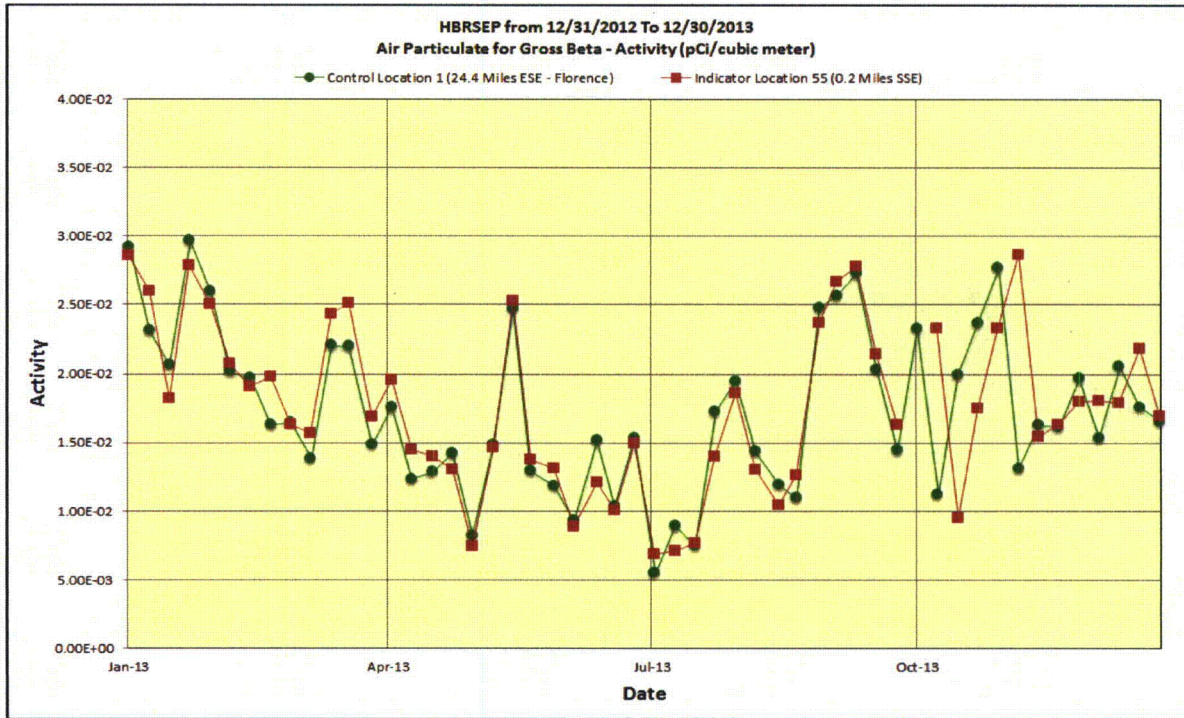


Figure 3.1-8

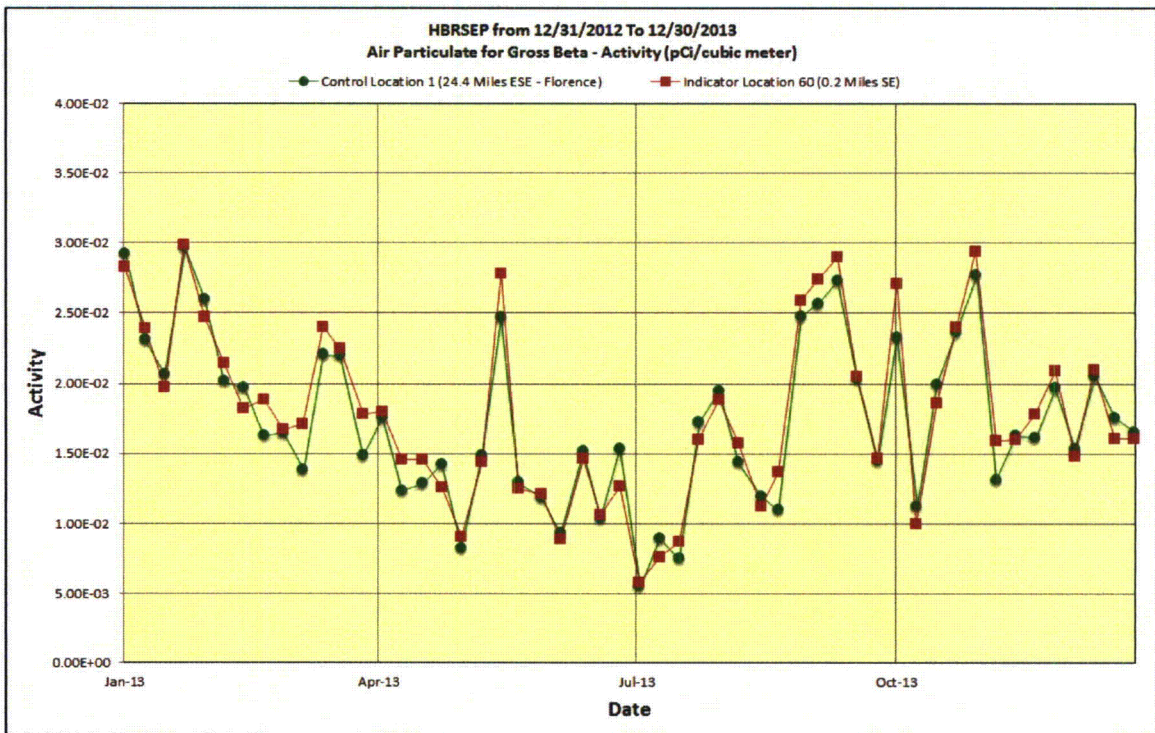
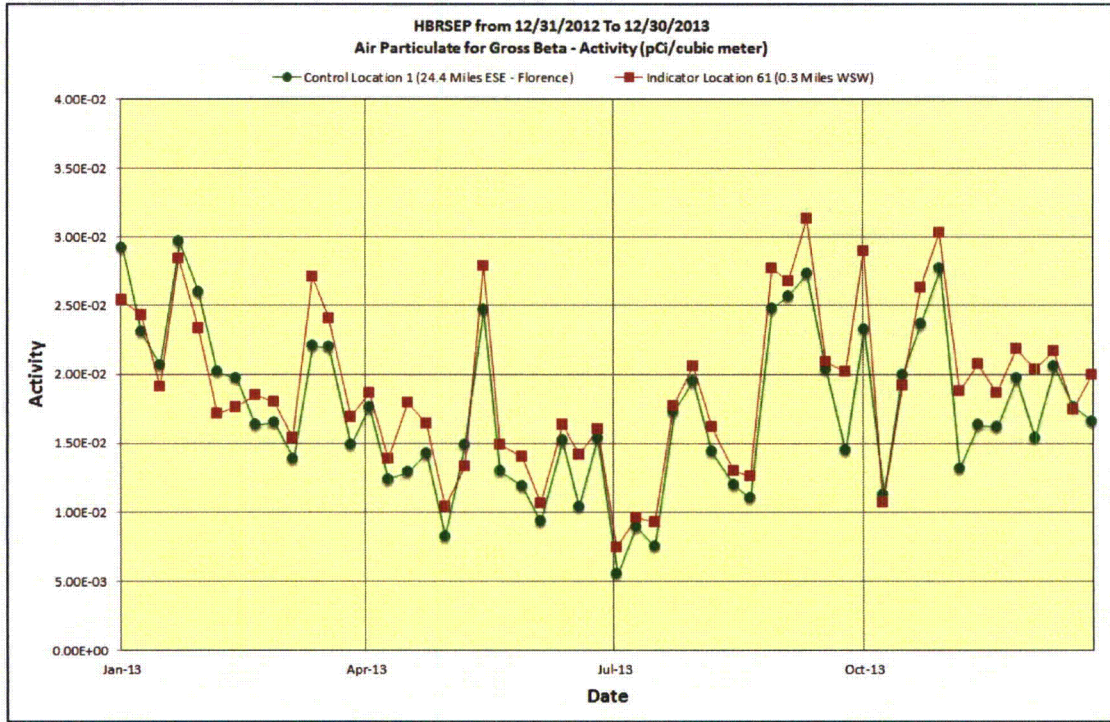




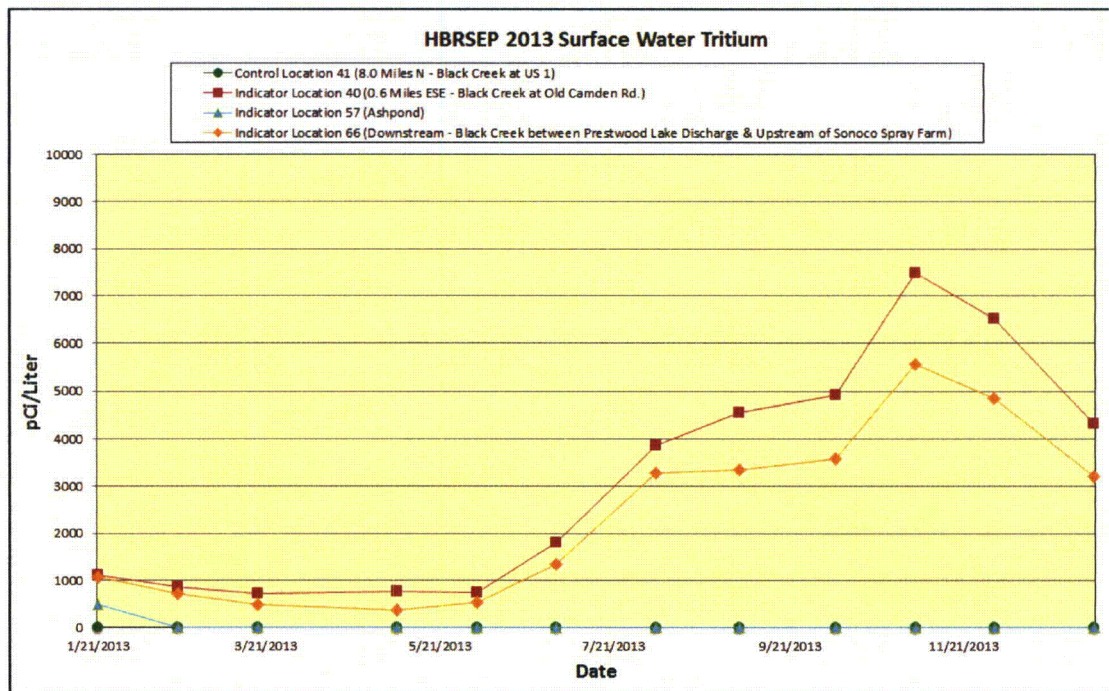
Figure 3.1-9



### 3.2 SURFACE WATER

Surface water (SW) composite samples are sampled monthly and analyzed for gamma emitting radionuclides and for tritium radioactivity. The analyses indicated that no detectable concentrations of gamma – emitting radionuclides relating to plant effluents appeared in any of the indicator and control samples. All concentrations of natural occurring gamma-emitters were less than their respective LLDs (see Table 2.2-C). None of the control samples indicated the presence of tritium; however, 25 out of 36 indicator samples did indicate the presence of tritium in 2013. The average annual tritium activity was  $2.66E+3$  pCi/L, with the results ranging from  $3.67E+2$  pCi/L to  $7.48E+3$  pCi/L. The surface water indicator location with the highest tritium mean in 2013 was the Lake Robinson surface water (SW-40 - Black Creek at Old Camden Rd.) with a mean of  $3.14E+3$  pCi/L, and results ranging from  $7.30E+2$  pCi/L to  $7.48E+3$  pCi/L; which is attributed to plant operation. Lake Robinson's tritium activity is cyclic and follows HBRSEP's fuel cycle. Figure 3.2-1 displays the tritium activity throughout 2013 for all surface water samples. These surface waters do not supply drinking water at any downstream location and are not typically used for irrigation. Therefore, radiological dose via this pathway (surface water) is limited to the consumption of fish (0.007 mrem/yr.) and evaporation of tritium (0.192 mrem/yr. using RNP 2013 Meteorology Data) from Lake Robinson and its subsequent inhalation and ingestion from vegetable gardens and meat producing animals. Using the methodology of Regulatory Guide 1.109, a dose of 0.199 millirem/year to the maximum exposed individual could be assigned to this pathway.

Figure 3.2-1



### **3.3 GROUND WATER**

Ground water (GW) samples are collected and analyzed quarterly for gamma emitters and tritium. Some of the ground water samples are also analyzed for low-level radioiodine and for gross beta. No by-product/plant-related gamma activity associated with plant operations was detected in the sixty (60) indicator samples of ground water collected in 2013. Some gamma LLDs were not met, for third quarter 2013 ground water samples, due to analysis counting constraints which stemmed from lengthy hold times on the samples (see Appendix D). The measured concentrations of the gamma analyses indicated concentrations below their required LLD as specified in the HBRSEP ODCM in Table 4.1-3 titled "Lower Limit of Detection (LLD)" for the year 2013 and Table 2.2-C of this report.

The ground water samples had detectable concentrations of tritium activity in twenty-five (25) out of sixty (60) samples, for an average concentration of  $5.85E+2$  pCi/L; with a range of  $1.65E+2$  pCi/L to  $1.69E+3$  pCi/L. The measured ground water tritium concentrations were below the required HBRSEP ODCM Table 4.1-3 LLDs for environmental samples and Table 2.2-C. The tritium limits are 2000 picocuries per Liter (pCi/L) for a drinking water pathway and 3000 pCi/L if no drinking water pathway exists. HBRSEP administratively established a ground water tritium analysis LLD of approximately 250 pCi/L, which is well below the requirements specified in the HBRSEP ODCM. These tritium results are also well below the EPA reportable drinking water limit (20,000 pCi/Liter) and the non-drinking water limit (30,000 pCi/Liter).

During 2013, eight (8) ground water indicator samples were analyzed for I-131 to the HBRSEP ODCM drinking water limit ( $<1$  pCi/L). No detectable concentrations of I-131 activity were detected in the eight samples; however, two of the eight samples, from third quarter 2013, did not meet the required HBRSEP ODCM LLD for drinking water (see Appendix D). Also during 2013, four (4) GW indicator samples were analyzed for gross beta activity, with activity present in all four samples, for an average concentration of  $1.81 E+0$  pCi/L, with a range of  $1.29E+0$  pCi/L to  $3.04E+0$  pCi/L. Refer to Appendix C or Appendix D for deviations and unavailable samples in the 2013 collection year.

### **3.4 MILK / BROADLEAF VEGETATION**

Milk monitoring has not been conducted due to the unavailability of milk samples in the area since July 17, 1998, when the dairy ceased operation. Milk sampling will resume if a new sample location is identified. Broadleaf sampling is conducted since no milk animals are located within a radius of approximately five miles of the plant in any sector and is used to calculate dose to an individual via the vegetation-milk-man pathway.

Broadleaf vegetation sampling is accomplished by collecting cherry, saffras, and wax myrtle leaves in 2013. Three species of samples, when available, are collected monthly at five locations (one control and four indicator locations at the site boundary selected using historical meteorology with the highest calculated annual average ground level deposition). Broadleaf sampling is conducted since no milk animals are located within a radius of approximately five

miles of the plant and is used to simulate dose to an individual via the milk pathway for compliance purposes.

During 2013, 27 of 60 samples taken from the indicator sites demonstrated detectable concentrations of Cs-137 for an average value of  $4.81E+1$  pCi/kg (wet). The control samples had detectable concentrations of Cs-137 in 8 of 15 samples with a mean concentration of  $5.31E+1$  pCi/kg (wet). Upon comparing these results, it is concluded that the indicator values reflect fallout Cs-137 contamination. Past sampling experience further supports this interpretation. Refer to Appendix C and Appendix D for deviations and unavailable samples in the 2013 collection year.

### **3.5 FOOD PRODUCTS**

During 2013, one food product (FP) sample was collected from the control location (FP-49) and from each of the indicator locations (FP-54 and FP-58). Collards were collected from the control location (FP-49) and one indicator location (FP-58), while wheat was collected from indicator location FP-54 at Auburndale Plantation due to this area being irrigated by water in which liquid plant effluents have been discharged. No gamma activity associated with plant operation was detected in any control or indicator samples for the 2013 collection period.

### **3.6 AQUATIC VEGETATION**

The aquatic vegetation samples are considered to be sensitive environmental indicators used as long term trending and do not constitute a dose pathway. In 2013, there were three aquatic vegetation indicator samples and one aquatic vegetation control sample collected. The aquatic vegetation samples collected pose no radiological dose consequence since this is not a dose pathway to the general public. Gamma analyses of the aquatic vegetation samples detected no plant-related activity in any of the samples, other than natural occurring gamma activity.

### **3.7 FISH**

Samples of free-swimming and bottom-feeding fish were taken from Lake Robinson and Prestwood Lake (the first downstream lake) and compared to similar fish from a control lake, which is unaffected by plant operation. During 2013, 4 out of 4 bottom-feeding fish and 4 out of 4 free-swimming fish (indicator sites) demonstrated detectable concentrations of Cs-137 for an average value of  $2.51E+1$  pCi/kg (wet) and  $3.69E+1$  pCi/g (wet), respectively. The control samples had detectable concentrations of Cs-137 for 2 out of 2 bottom-feeding fish and 2 out of 2 free-swimming fish for an average concentration of  $2.61E+1$  pCi/kg (wet) and  $5.97E+1$  pCi/kg (wet), respectively. Upon comparing these results, it is concluded that the 2013 indicator values reflect fallout Cs-137 contamination. Past sampling experience further supports this interpretation.

### **3.8 SHORELINE SEDIMENT**

In 2013, no gamma activity associated with plant operation was detected in any sample in the semiannual shoreline sediment samples. Only naturally occurring gamma activity was detected. No Cs-137 activity was detected in 2013; however, Cs-137 activity has been detected in shoreline sediment samples in past years, which was attributed to worldwide fallout and not the plant operation.

### **3.9 BOTTOM SEDIMENT**

During 2013, a total of three bottom sediment samples were analyzed from the indicator location and one from the control location. The bottom sediment samples are used as indicators of buildup of radioactivity in the environment and do not constitute a dose pathway. Cs-137 activity was detectable in one of the three indicator bottom sediment samples in 2013, with a single concentration of  $3.68E+2$  pCi/kg (dry). The control sample indicated detectable Cs-137 activity with a concentration of  $1.69E+2$  pCi/kg (dry). This concentration is similar to previous years and does not indicate a buildup in the environment. No other gamma activity, except for naturally occurring gamma activity, was detected in the annual bottom sediment samples in 2013.

### **3.10 ASIATIC CLAMS**

Benthic samples from Lake Robinson during 2013 continue to confirm the absence of any substantial populations of Asiatic clams (*Corbicula fluminea*). The natural chemistry of the lake (i.e., low alkalinity and hardness) inhibits their proliferation.

### **3.11 DIRECT GAMMA RADIATION**

#### **3.11.1 ENVIRONMENTAL TLD**

In 2013, 169 TLDs were analyzed, 165 at indicator locations and 4 at the control location. TLDs are collected and analyzed quarterly.

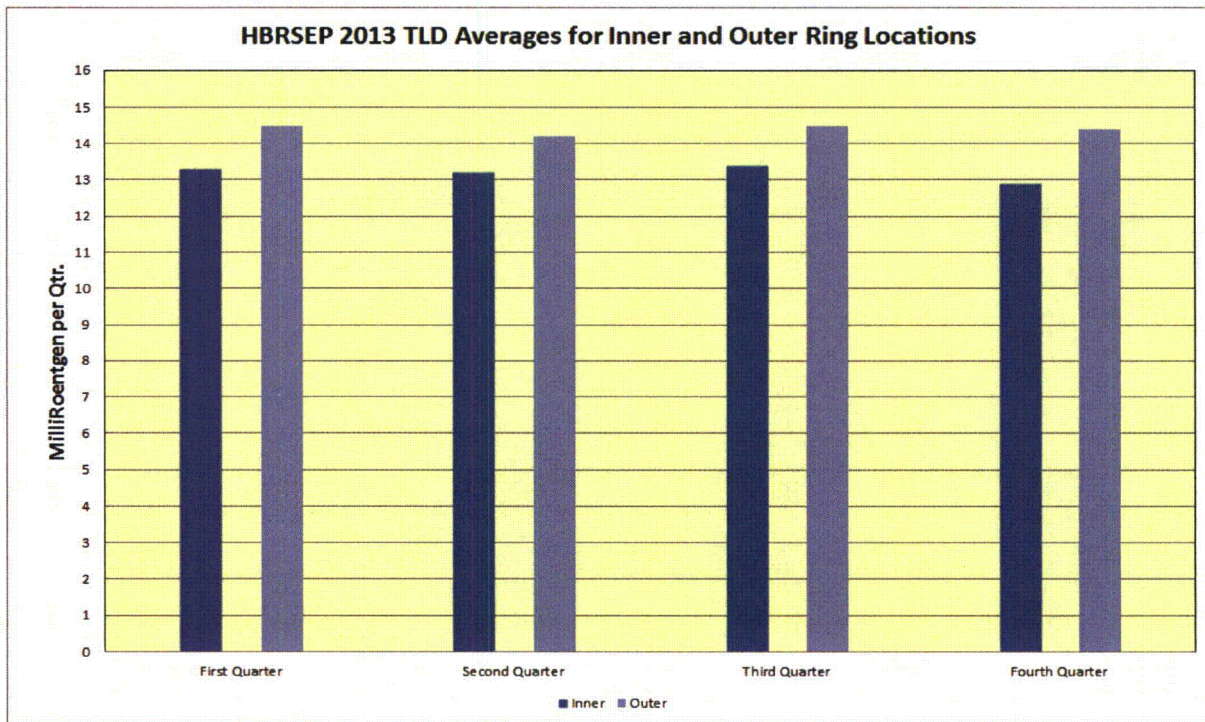
Thermoluminescent dosimeters (TLDs) were used to monitor ambient radiation exposures in the plant environs. The average quarterly exposure at the indicator and control locations was 13.7 mR/std. qtr. and 12.1 mR/std. qtr. respectively. The highest indicator location for 2013 was TLD location #35 at 4.5 miles SSW at Kelly Bridge Road (#S-31-51) and its average was 21.2 mR/std. qtr. The differences among these locations are attributed to variations in soils, local geology, and are not the result of plant operations. There were three missing TLDs during the HBRSEP 2013 collection period (CR # 601951 and CR # 616846/ PIP # G-13-01474).

Comparison of the quarterly TLD exposure within approximately 1 mile (inner ring) of the plant with that at approximately 5 miles (outer ring) is presented in Figure 3.11.1. These data illustrate that the quarterly inner ring TLD exposures for all four quarters of 2013 are slightly lower than the outer ring TLD exposures.

Each area monitoring station includes a TLD packet which is a polyethylene bag containing three calcium sulfate phosphors contained in a Panasonic UD-814 badge. The TLD is light tight and the bag is weather-resistant.

Dosimeters are machine annealed before field placement. Following exposure in the field, each dosimeter is read utilizing a Panasonic TLD reader. The instrument integrates the light photons emitted from traps as the dosimeter is heated. Calibration is calculated using dosimeters irradiated to known doses for each set of dosimeters measured. Prior to the measurement of each dosimeter, the instrument is checked through use of an internal constant light source as a secondary standard. The exposure reported is corrected for exposure received in transit and during storage through the use of control dosimeters.

**Figure 3.11.1**



### **3.12 LAND USE CENSUS**

The 2013 HBRSEP Annual Land Use Census was conducted in July, 2013 to meet the requirements of the HBRSEP ODCM 4.4.1. Table 3.11.3 summarizes the HBRSEP 2013 census results. During the 2013 census no milk locations were identified within five miles (8 kilometers) of HBRSEP. Based on a review of sampling requirements, existing/new sample locations, and relative depositions values, no new environmental program changes were required as a result of the 2013 Land Use Census.

#### **3.12.1 PURPOSE OF LAND USE CENSUS**

The land use census identifies the pathways (or routes) that radioactive material may reach the general populations near commercial nuclear generating stations. This is accomplished by completing studies each year that identify how the surrounding lands are used by the population. A comprehensive census of the use of the land within a five-mile (8 kilometer) distance of the plant is conducted once per 12 months during the growing season. This information is used for dose assessment and to identify changes to the stations sampled and the type of samples. These results ensure that the Radiological Environmental Monitoring Program (REMP) is based upon current data regarding human activity in the vicinity of the plant. Therefore, the purpose of the land use census is to ensure the monitoring program is current, as well as provide data for the calculation of estimated radiation exposure.

The pathways evaluated are:

- Ingestion Pathway - Results from eating food products that may have radioactive materials deposited on them, incorporated radioactive materials from the soil or atmosphere. Another pathway is through drinking milk from local cows or goats, if these are present and if not then broadleaf vegetation is collected in lieu of milk. The grass used to feed these animals may have incorporated or had deposited on it radioactive materials that can be transferred to the milk.
- Direct Radiation Exposure Pathway- Results from deposition of radioactive materials on the ground or from passage of these radioactive materials in the air.
- Inhalation Pathway- Results from breathing radioactive materials transported in the air.

#### **3.12.2 METHODOLOGY**

The following must be identified within the five-mile (8 kilometer) radius of the plant for each of the sixteen meteorological sectors (compass direction the winds may blow, for example NNE [North North East]):

- The nearest resident
- The nearest garden of greater than 500 square feet, producing broadleaf vegetables
- The nearest milk animal
- The nearest meat/egg producing animal

The primary methods are visual inspection from the roadside within the five (5) mile radius and personal contact with the individuals.

### **3.12.3 LAND USE CENSUS RESULTS**

The HBRSEP Land Use Census was performed July 2013 to meet the requirements of the HBRSEP's ODCM. The last HBRSEP land use census was performed in August 2012. The 2012 and 2013 results of the survey for the nearest resident, garden, milk and meat/egg producing animal for each meteorological sector are compared in Table 3.12.3.

No milk producing animals were identified within the five-mile radius of the site in any sector. Milk sampling will resume if a new sample location is identified. Also, no garden (at the time of the census) was currently growing leafy vegetables. Vegetables like tomatoes, squash, okra, cucumbers, etc. are examples of the vegetables of choice for this area and are what is typically grown and sampled in the past. Sampling of these vegetables (non-leafy) will continue until leafy vegetables can be identified. The results of the 2013 Land Use Census and 10 year average meteorological data were reviewed. No changes in release pathways were identified as a result of the land use census that would require an ODCM change, additional dose calculations, or procedure changes were identified.



**Table 3.12.3 HBRSEP Land Use Census Comparison (2012 – 2013)**

Nearest Pathway (Miles)\*\*

SECTOR	RESIDENT		GARDEN		MEAT/EGG ANIMAL		MILK ANIMAL	
	2012	2013	2012	2013	2012	2013	2012	2013
N	2.81	2.81	3.29	2.81*	4.75	2.81*	----	----
NNE	1.51	1.51	2.08	2.08	2.71	2.71	----	----
NE	1.03	1.03	2.71	2.71	----	----	----	----
ENE	0.83	0.83	1.07	1.07	----	----	----	----
E	0.90	0.90	1.05	1.05	2.98	2.98	----	----
ESE	0.62	0.62	1.28	1.28	----	----	----	----
SE	0.38	0.38	1.80	0.38*	2.00	2.00	----	----
SSE	0.33	0.33	2.37	2.37	2.37	2.37	----	----
S	0.40	0.40	2.25	2.25	2.62	2.62	----	----
SSW	0.37	0.37	0.84	0.84	0.93	0.84*	----	----
SW	0.46	0.46	----	----	----	----	----	----
WSW	0.45	0.45	0.88	0.88	0.88	0.88	----	----
W	0.54	0.54	0.70	0.70	----	----	----	----
WNW	0.60	0.60*	0.83	0.83	4.27	4.27	----	----
NW	1.59	1.59	2.49	2.49	2.40	2.40	----	----
NNW	2.04	2.04	3.80	3.80	----	----	----	----

\* Represents a change from the previous year.

“----” indicates no occurrences within the 5 mile radius

\*\* Sector and distance determined by Global Positioning System.

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## **4.0 QUALITY ASSURANCE**

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### **4.1 SAMPLE COLLECTION**

Environmental sample collection was performed by HBRSEP Chemistry Fisheries, and Aquatic Ecology as specified by approved sample collection procedures in 2013.

### **4.2 SAMPLE ANALYSIS**

HEEC Laboratories performed the environmental sample analyses (January – April, 2013) as specified by approved analysis procedures. HEEC Laboratories were located in New Hill, North Carolina, at Progress Energy’s Environmental Center until the merger decommissioned the lab and services were consolidated at the EnRad Laboratory in Huntersville, North Carolina. EnRad Laboratories performed the environmental sample analyses (May – December, 2013) as specified by approved analysis procedures. EnRad Laboratories is located in Huntersville, North Carolina, at Duke Energy Progress Inc.’s Environmental Center.

### **4.3 DOSIMETRY ANALYSIS**

The Radiation Dosimetry and Records group at the Harris Energy and Environmental Center (HEEC) in New Hill, NC performed environmental dosimetry measurements as specified by approved dosimetry analysis procedures.

### **4.4 LABORATORY EQUIPMENT QUALITY ASSURANCE**

#### **4.4.1 DAILY QUALITY CONTROL**

HEEC and EnRad Laboratories both have an internal quality assurance program which monitors each type of instrumentation for reliability and accuracy. Daily quality control checks ensure that instruments are in proper working order and these checks are used to monitor instrument performance.

#### **4.4.2 CALIBRATION VERIFICATION**

National Institute of Standards and Technology (NIST) standards that represent counting geometries are analyzed as unknowns at various frequencies ranging from weekly to annually to verify that efficiency calibrations are valid. The frequency is dependent upon instrument use and performance. Investigations are performed and documented should calibration verification data fall outside of the acceptable limits.

#### **4.4.3 BATCH PROCESSING**

Method quality control samples are analyzed with sample analyses that are processed in batches. These include gross beta in ground water and tritium analyses.

#### **4.5 DUKE ENERGY INTERCOMPARISON PROGRAM**

EnRad Laboratories participated in the Duke Energy Fleet Scientific Services (FSS) Intercomparison Program during 2013. Interlaboratory cross-check standards including gamma in water (Marinelli beakers) and tritium in water samples were analyzed during 2013. A summary of the EnRad Laboratory program results for 2013 is documented in Table 4.0-A.

#### **4.6 ECKERT & ZIEGLER ANALYTICS CROSS CHECK PROGRAM**

EnRad Laboratories participated in the Eckert & Ziegler Analytics Cross Check Program during 2013. Cross-check standards including Marinelli beakers, air filters, tritium in water, and Iodine in milk samples were analyzed at various times of the year. A summary of the EnRad Laboratory program results for 2013 is documented in Table 4.0-B.

The Chemistry Services Radiochemistry Laboratory located at the Harris Energy and Environmental Center (HEEC) participated in the Environmental Cross Check Program administered by Eckert & Ziegler Analytics, Inc. for the first quarter 2013 (the laboratory was subsequently decommissioned and services were consolidated at the EnRad Laboratory in Huntersville, NC). Cross-check standards including gross beta in water, gamma in milk and soil, and tritium in water were analyzed during the first quarter period of 2013. A summary of the HEEC Laboratory program results for first quarter 2013 is documented in Table 4.0-D.

#### **4.7 ERA PROFICIENCY TESTING**

EnRad Laboratories performed method proficiency testing through a program administered by Environmental Resource Associates (ERA) of Arvada, CO. ERA supplied requested method proficiency samples for analysis and nuclide concentration determination. ERA reported proficiency test results to the North Carolina Department of Health and Human Services, North Carolina Public Health Drinking Water Laboratory Certification Program. A summary of these proficiency test data for 2013 is documented in Table 4.0-C.

#### **4.8 STATE OF SOUTH CAROLINA INTERCOMPARISON PROGRAM**

HBRSEP routinely participates with the Bureau of Radiological Health of the State's Department of Health and Environmental Control (DHEC) in an intercomparison program. The split sampling program between SC DHEC and Duke Energy Progress,

Inc. (HBRSEP) consist of surface water, fish, vegetation, and sediment samples collected by HBRSEP. Samples. Samples are routinely split with SC DHEC for intercomparison analysis. Results of the analyses performed on split and duplicate samples are sent to SC DHEC. This program was discontinued late in the year at the request of SC DHEC (PIP # G-13-02184) and was replaced by a similar program with a vendor laboratory.

# TABLE 4.0-A

## DUKE ENERGY

### INTERLABORATORY COMPARISON PROGRAM

#### 2013 EnRad Fleet Scientific Services Cross Check Performance Summary

Cross check samples were distributed by Fleet Scientific Services (FSS) in accordance with Duke Energy Nuclear Generation Procedure SRPMP 9-2. Six water samples were analyzed for tritium and gamma emitters. The below table lists results for specific analyses. All 27 results were evaluated as prescribed in procedure SRPMP 9-2 and passed the acceptance criteria for the program.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	FSS Value	EnRad/FSS Ratio	Evaluation
Tritium in Water	Q131TWR1	H-3	1	pCi/L	7.48E+02	7.27E+02	1.03	Pass
					7.53E+02	7.27E+02	1.04	Pass
					7.11E+02	7.27E+02	0.98	Pass
	Q131TWR2	H-3	1	pCi/L	7.51E+05	7.85E+05	0.96	Pass
					7.52E+05	7.85E+05	0.96	Pass
					7.49E+05	7.85E+05	0.95	Pass
	Q131TWR3	H-3	1	pCi/L	6.23E+03	5.86E+03	1.06	Pass
					6.36E+03	5.86E+03	1.09	Pass
					6.32E+03	5.86E+03	1.08	Pass
Gamma in Water	Q131GWR - 0.5 L	Mn-54	1	pCi/L	4.16E+03	3.85E+03	1.08	Pass
		Co-57	1	pCi/L	7.42E+03	6.86E+03	1.08	Pass
		Co-60	1	pCi/L	5.94E+03	5.84E+03	1.02	Pass
		Sn-113	1	pCi/L	7.15E+03	7.23E+03	0.99	Pass
		Ba-133	1	pCi/L	5.86E+03	5.70E+03	1.03	Pass
		Cs-137	1	pCi/L	3.38E+03	3.46E+03	0.98	Pass
	Q131GWR - 1.0 L	Mn-54	1	pCi/L	4.21E+03	3.85E+03	1.09	Pass
		Co-57	1	pCi/L	7.68E+03	6.86E+03	1.12	Pass
		Co-60	1	pCi/L	5.90E+03	5.84E+03	1.01	Pass
		Sn-113	1	pCi/L	6.94E+03	7.23E+03	0.96	Pass
		Ba-133	1	pCi/L	5.58E+03	5.70E+03	0.98	Pass
		Cs-137	1	pCi/L	3.38E+03	3.46E+03	0.98	Pass
	Q131GWR - 3.5 L	Mn-54	1	pCi/L	4.38E+03	3.85E+03	1.14	Pass
		Co-57	1	pCi/L	7.91E+03	6.86E+03	1.15	Pass
		Co-60	1	pCi/L	6.18E+03	5.84E+03	1.06	Pass
Sn-113		1	pCi/L	7.52E+03	7.23E+03	1.04	Pass	
Ba-133		1	pCi/L	5.93E+03	5.70E+03	1.04	Pass	
		Cs-137	1	pCi/L	3.48E+03	3.46E+03	1.00	Pass

# TABLE 4.0-B

## ECKERT & ZIEGLER ANALYTICS

### CROSS CHECK PROGRAM

#### 2013 Cross Check Results for EnRad Laboratories

Cross check samples are received, prepared, and analyzed in all four quarters of 2013. Results are reported directly to Eckert & Ziegler Analytics. Environmental cross check samples were analyzed in replicate, and the average result reported to Eckert & Ziegler Analytics. The acceptance criteria for the program was based on the NRC Inspection Manual Procedure 84750 (IP 84750). Fifty-seven environmental results were reported, of which 57 (100%) met the acceptance criteria based on IP 84750.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/EZA Ratio	Evaluation
Beta Filter	E10509	Gross Beta	1	pCi	86.5	94.2	0.92	Agreement
	E10606	Gross Beta	3	pCi	187	215	0.87	Agreement
Gamma Filter	E10508	Ce-141	1	pCi	97.3	107	0.91	Agreement
		Cr-51	1	pCi	256	269	0.95	Agreement
		Cs-134	1	pCi	113	122	0.93	Agreement
		Cs-137	1	pCi	144	151	0.95	Agreement
		Co-58	1	pCi	109	119	0.92	Agreement
		Mn-54	1	pCi	121	119	1.02	Agreement
		Fe-59	1	pCi	149	144	1.04	Agreement
		Zn-65	1	pCi	179	171	1.04	Agreement
		Co-60	1	pCi	224	228	0.98	Agreement
I-131 in Milk	E10531	I-131	2	pCi/L	91.8	97.3	0.94	Agreement
I-131 in Water	E10709	I-131	4	pCi/L	98.6	99	1.00	Agreement
Beta in Water	E10532	Gross Beta	2	pCi/L	304	293	1.04	Agreement
	E10708	Gross Beta	4	pCi/L	291	279	1.04	Agreement
I-131 Cartridge	E10533	I-131	2	pCi	94	89.7	1.05	Agreement
	E10707	I-131	4	pCi	77.2	76.5	1.01	Agreement
Gamma Composite Filter	E10534	Ce-141	2	pCi	80.6	77.1	1.05	Agreement
		Cr-51	2	pCi	240	214	1.12	Agreement
		Cs-134	2	pCi	107	107	1.00	Agreement
		Cs-137	2	pCi	122	129	0.95	Agreement
		Co-58	2	pCi	76.6	80.2	0.96	Agreement
		Mn-54	2	pCi	149	147	1.01	Agreement
		Fe-59	2	pCi	105	102	1.03	Agreement
		Zn-65	2	pCi	196	186	1.06	Agreement
		Co-60	2	pCi	152	150	1.02	Agreement

## TABLE 4.0-B (Cont.)

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	EZA Value	EnRad/EZA Ratio	Evaluation
Tritium in Water	E10535	H-3	2	pCi/L	9690	9890	0.98	Agreement
	E10705	H-3	4	pCi/L	13800	14500	0.95	Agreement
Gamma Composite Filter	E10706	Ce-141	4	pCi	107	117	0.91	Agreement
		Cr-51	4	pCi	332	317	1.05	Agreement
		Cs-134	4	pCi	145	152	0.96	Agreement
		Cs-137	4	pCi	126	135	0.93	Agreement
		Co-58	4	pCi	118	120	0.98	Agreement
		Mn-54	4	pCi	177	180	0.99	Agreement
		Fe-59	4	pCi	140	118	1.19	Agreement
		Zn-65	4	pCi	781	793	0.99	Agreement
		Co-60	4	pCi	155	157	0.99	Agreement
Gamma in Milk	E10536	I-131	2	pCi/L	96.2	95.5	1.01	Agreement
		Ce-141	2	pCi/L	92	90.4	1.02	Agreement
		Cr-51	2	pCi/L	238	250	0.95	Agreement
		Cs-134	2	pCi/L	122	125	0.98	Agreement
		Cs-137	2	pCi/L	145	151	0.96	Agreement
		Co-58	2	pCi/L	93.1	94	0.99	Agreement
		Mn-54	2	pCi/L	180	172	1.05	Agreement
		Fe-59	2	pCi/L	129	120	1.08	Agreement
		Zn-65	2	pCi/L	239	217	1.10	Agreement
		Co-60	2	pCi/L	177	175	1.01	Agreement
Gamma in Water	E10704	I-131	4	pCi/L	95.4	92.4	1.03	Agreement
		Ce-141	4	pCi/L	89.3	88.8	1.01	Agreement
		Cr-51	4	pCi/L	243	240	1.01	Agreement
		Cs-134	4	pCi/L	109	115	0.95	Agreement
		Cs-137	4	pCi/L	104	102	1.02	Agreement
		Co-58	4	pCi/L	91.5	90.6	1.01	Agreement
		Mn-54	4	pCi/L	141	136	1.04	Agreement
		Fe-59	4	pCi/L	92.6	89.1	1.04	Agreement
		Zn-65	4	pCi/L	629	600	1.05	Agreement
		Co-60	4	pCi/L	123	119	1.04	Agreement

# TABLE 4.0-C

## ENVIRONMENTAL RESOURCE ASSOCIATES (ERA) PROFICIENCY TESTING

### 2013 Proficiency Test Results for EnRad Laboratories

North Carolina Department of Health and Human Services Laboratory Certification  
EnRad Laboratories

Proficiency test samples are received, prepared, and analyzed in second and fourth quarters of 2013. Results are reported directly to Environmental Resource Associates as described in the instruction package within the study period. Proficiency test data are reported to ERA for evaluation. The acceptance criteria for the program was based on the National Environmental Laboratory Accreditation Conference (NELAC) Field of Proficiency Testing criteria. Fourteen results were reported of which 12 (85.7%) met the acceptance criteria. ERA reports proficiency test results to the North Carolina Department of Health and Human Services, North Carolina Public Drinking Water Laboratory Certification Program. This testing is to satisfy the North Carolina state drinking water radiochemistry certification requirements. The individual measurements were evaluated and results falling outside the acceptable ratio criteria had an evaluation performed to identify any recommended remedial actions and to reduce anomalous errors (PIPs G-13-00925 and G-13-02152). Complete documentation of any evaluation will be available and provided to the NRC upon request.

Sample	Sample ID	Nuclide	Quarter	Units	EnRad Value	ERA Value	Acceptance Limits	Evaluation
Gamma Emitters in Water	RAD-93	Ba-133	2	pCi/L	82.5	82.1	69.0 - 90.3	Acceptable
		Cs-134	2	pCi/L	41.9	42.8	34.2 - 47.1	Acceptable
		Cs-137	2	pCi/L	42.1	41.7	37.0 - 48.8	Acceptable
		Co-60	2	pCi/L	71	65.9	59.3 - 75.0	Acceptable
		Zn-65	2	pCi/L	207	189	170 - 222	Acceptable
Gamma Emitters in Water	RAD-95	Ba-133	4	pCi/L	48.3	54.2	44.7 - 59.9	Acceptable
		Cs-134	4	pCi/L	81.5	86.7	71.1 - 95.4	Acceptable
		Cs-137	4	pCi/L	180	206	185 - 228	Not Acceptable *
		Co-60	4	pCi/L	103	102	91.8 - 114	Acceptable
		Zn-65	4	pCi/L	337	333	300 - 389	Acceptable
Tritium in Water	RAD-93	H-3	2	pCi/L	6620	4050	3450 - 4460	Not Acceptable #
	RAD-95	H-3	4	pCi/L	17000	17700	15500 - 19500	Acceptable
Iodine-131 in Water	RAD-93	I-131	2	pCi/L	26.9	23.8	19.7 - 28.3	Acceptable
	RAD-95	I-131	4	pCi/L	21.4	23.6	19.6 - 28.0	Acceptable

\* See PIP G-13-02152

# See PIP G-13-00925



# TABLE 4.0-D

## ECKERT & ZIEGLER ANALYTICS

### CROSS CHECK PROGRAM

#### 2013 Cross Check Results for HEEC Laboratories

The Chemistry Services Radiochemistry Laboratory at HEEC participated in the Environmental Cross Check Program administered by Eckert & Ziegler Analytics, Inc. (EZA) for first quarter 2013. Cross check samples are received, prepared, and analyzed in one quarter of 2013. Results are reported directly to Eckert & Ziegler Analytics. Environmental cross check samples were analyzed in replicate and the average result reported to Eckert & Ziegler Analytics. The acceptance criteria for the program was based on the NRC Inspection Manual Procedure 84750 (IP 84750). Cross check samples were evaluated in accordance with applicable procedures. Twenty-one environmental results were reported for the year, and all passed the acceptance criteria (100%) based on IP 84750.

Sample	Sample ID	Nuclide	Quarter	Units	HEEC Value	EZA Value	HEEC/EZA Ratio	Evaluation
Gross beta water	E10437	Gross beta	1	pCi/L	315	300	1.05	Agreement
Tritium in water	E10436	H-3	1	pCi/L	13200	14000	0.94	Agreement
Gamma Milk	E10438	Cr-51	1	pCi/L	470	472	1.00	Agreement
		Mn-54	1	pCi/L	223	208	1.07	Agreement
		Co-58	1	pCi/L	209	208	1.00	Agreement
		Fe-59	1	pCi/L	270	252	1.07	Agreement
		Co-60	1	pCi/L	408	400	1.02	Agreement
		Zn-65	1	pCi/L	322	301	1.07	Agreement
		I-131	1	pCi/L	97	100	0.97	Agreement
		Cs-134	1	pCi/L	209	214	0.98	Agreement
		Cs-137	1	pCi/L	275	266	1.04	Agreement
		Ce-141	1	pCi/L	192	187	1.02	Agreement
Gamma Soil	E10439	Cr-51	1	pCi/g	0.785	0.789	1.00	Agreement
		Mn-54	1	pCi/g	0.359	0.348	1.03	Agreement
		Co-58	1	pCi/g	0.343	0.348	0.99	Agreement
		Fe-59	1	pCi/g	0.453	0.422	1.07	Agreement
		Co-60	1	pCi/g	0.67	0.668	1.00	Agreement
		Zn-65	1	pCi/g	0.549	0.503	1.09	Agreement
		Cs-134	1	pCi/g	0.363	0.358	1.02	Agreement
		Cs-137	1	pCi/g	0.539	0.529	1.02	Agreement
		Ce-141	1	pCi/g	0.324	0.313	1.03	Agreement

**APPENDIX A**

**ENVIRONMENTAL SAMPLING  
&  
ANALYSIS PROCEDURES**

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# APPENDIX A

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## ENVIRONMENTAL SAMPLING AND ANALYSIS PROCEDURES

Adherence to established procedures for sampling and analysis of all environmental media at the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP) was required to ensure compliance with provisions of the Nuclear Regulatory Commission's Regulatory Guide 4.8, HBRSEP Technical Specifications, and the HBRSEP Off-Site Dose Calculation Manual (ODCM). Analytical procedures were employed to ensure that the ODCM detection capabilities were achieved at both company laboratories (HEEC and EnRad).

Environmental sampling and analyses were performed by Harris Energy and Environmental Center (HEEC) Laboratories (January – April, 2013), EnRad Laboratories (May – December, 2013), Dosimetry and Records, Fisheries and Aquatic Ecology.

Section IV of this appendix describes the environmental sampling frequencies and analysis procedures by media type that each laboratory conducted in 2013.

### I. CHANGE OF SAMPLING PROCEDURES

No changes were made to the sampling procedure during 2013 other than where to ship samples. In May of 2013, the HBRSEP REMP samples were no longer being shipped to HEEC, but were going to EnRad Laboratories for analysis.

### II. DESCRIPTION OF ANALYSIS PROCEDURES

Gamma spectroscopy analyses are performed using high purity germanium gamma detectors with thin aluminum windows housed in steel and lead shields and Canberra analytical software. Designated sample volumes are transferred to appropriate counting geometries and analyzed by gamma spectroscopy. Per HEEC procedures, aquatic and broadleaf vegetation and food product samples are transferred to an appropriate counting geometry container, as sampled (wet), weighed, and analyzed. According to HEEC procedures; fish samples are prepared by placing small raw, edible portions of the fish into an appropriate counting geometry container and shoreline and bottom sediments are dried, ground, and placed in an appropriate counting geometry container where all are weighed and analyzed by gamma spectroscopy. The EnRad Laboratory's perishable samples such as fish, food products, aquatic vegetation, and broadleaf vegetation are ground to achieve a homogeneous mixture and then transferred to an appropriate counting geometry. EnRad's soil and sediment samples are dried, sifted to remove foreign objects (rocks, clams, glass, etc.), and then transferred to an appropriate counting geometry container. Once prepared for counting, EnRad's samples (fish, food products,

aquatic vegetation, broadleaf vegetation, soils, and sediments) are analyzed by gamma spectroscopy.

Low-level Iodine-131 (LLI-131) in ground water is determined by an instrumental method at the HEEC Laboratory. The analysis involves passing a known sample volume over a premeasured volume of anion exchange resin to remove and concentrate any iodine in the aqueous sample (water). The resin is then transferred to an appropriate counting geometry container and analyzed by direct gamma spectroscopy. Low-level iodine analyses are performed at the EnRad Laboratory by passing a designated sample aliquot through a pre-weighed amount of ion exchange resin to remove and concentrate any iodine in the aqueous sample (water). The resin is then dried, mixed thoroughly, and a net resin weight determined before being transferred to an appropriate counting geometry and analyzed by gamma spectroscopy.

Tritium analyses are performed monthly and quarterly by using a liquid scintillation analysis technique on an HEEC liquid scintillation counter (Packard TriCarb 2500 or 2900); while EnRad uses low-level environmental liquid scintillation analysis technique on a Packard 2550 liquid scintillation system or Perkin-Elmer 2900TR liquid scintillation system. Tritium samples are distilled and batch processed with a tritium spike and blank to verify instrument performance and sample preparation technique are acceptable.

Gross beta analysis is performed quarterly on a ground water sample by concentrating a designated aliquot of sample precipitate and analyzing it by Tennelec XLB Series 5 gas-flow proportional counters. Samples are batch processed with a blank to ensure sample contamination has not occurred.

### **III. CHANGE OF ANALYSIS PROCEDURES**

All the analysis procedures were changed in May 2013, due to all the samples being analyzed at the EnRad Laboratory from May of 2013 forward instead of the Harris Energy and Environmental Center (HEEC) as in past years. No EnRad analysis procedures were changed during 2013.

### **IV. SAMPLING AND ANALYSIS PROCEDURES**

#### **A.1 AIRBORNE PARTICULATE AND RADIOIODINE**

Airborne particulate (AP) and radioiodine (AR or AC) samples at each of ten locations were composited continuously by means of continuous air samplers. Air particulates were collected on a particulate filter and radioiodines were collected in a charcoal cartridge positioned behind the filter in the sample head. The samplers are designed to operate at a constant flow rate (in order to compensate for any filter loading) and are set to sample approximately 2 cubic feet per minute. Filters and cartridges were collected weekly. A separate weekly gamma analysis was performed on each charcoal cartridge. A weekly

gross beta analysis was performed on each filter and then the filters were composited to produce quarterly filter samples for gamma analysis. The continuous composite samples were collected from the locations listed below.

Location 1	=	24.4 miles ESE Florence, S.C. (Control)
Location 2	=	0.2 miles S Information Center
Location 3	=	0.5 miles N Microwave Tower
Location 4	=	0.4 miles ESE Spillway
Location 5	=	0.9 miles ENE East shore of lake near Johnson's Landing
Location 6	=	0.2 miles SSW Information Center
Location 7	=	6.4 miles ESE CP&L facility on RR Ave., Hartsville
Location 55	=	0.2 miles SSE South of West Settling Pond
Location 60	=	0.2 miles SE Robinson Picnic Area
Location 61	=	0.3 miles WSW West Parking lot near RR tracks

## A.2 SURFACE WATER

Weekly composite surface water (SW) samples were collected from four locations, with aliquots going to monthly composite samples. Tritium and gamma analyses were performed on the monthly composites. The composites are collected from the locations listed below.

Location 40	=	0.6 miles ESE Black Creek at old Camden Road (S-16-23) – Lake Robinson
Location 41	=	8.0 miles N Black Creek at US Hwy 1 (Control)
Location 57	=	Ash Pond
Location 66	=	Black Creek between Prestwood Lake discharge and upstream of Sonoco Spray Farm (downstream)

## A.3 GROUND WATER

Grab samples were collected quarterly from ground water (GW) wells at fifteen (15) locations. A gamma analysis and tritium analysis were performed on each sample. A low-level Iodine-131 Analysis was performed on GW-68 and GW-82 along with a gross beta analysis only on GW-82. The samples were collected from the locations listed below.

Location 42	=	Unit 1 Deep Wells
Location 64	=	0.6 miles SE Artesian Well
Location 68	=	Well A Btwn Unit 1 switchyard & breakroom
Location 69	=	Well B Behind the Training Building
Location 70	=	Well C Btwn the O&M Building & Fab Shop

- Location 71 = 0.87 miles NNW (MW-03A) Btwn Ash Pond & RR tracks
- Location 72 = 0.1 miles E (MW-06) 20 ft from FP/FH 7 fire hydrant & Unit 1 North Deep Well Pump
- Location 73 = 0.11 miles ENE (MW-13) Btwn Discharge Canal & Unit 1 Stand Alone Fuel Oil Tanks
- Location 75 = 0.05 miles NE (PSW-02) By Unit 1 boundary Fence to Unit 2 across paved rd. from Hydrogen Gas Tanks
- Location 76 = 0.49 miles N (PSW-03) NE corner of the MET Tower Station
- Location 77 = 0.25 miles SSE (TS-01B) By entrance rd. to Unit 1
- Location 78 = 0.17 miles SSE (TS-02C) NE corner by East Settling Pond influent by fence
- Location 79 = 1.0 mile N (TS-07C) S corner by cove & Discharge Canal
- Location 81 = 0.19 miles SSE (TS-17B) W of West Settling Pond across paved rd.
- Location 82 = 0.3 miles SSE (PDW-01) By entrance rd. to Unit 1

**A.4 BROADLEAF VEGETATION**

Monthly samples, three different species, were collected at each of five locations when available. A gamma analysis was performed on each sample. The samples were collected from the locations listed below.

- Location 50 = SSE Close to Site Boundary
- Location 51 = Close to Site Boundary
- Location 52 = 10 miles W near Bethune (Control)
- Location 62 = SE Close to Site Boundary
- Location 67 = S Close to Site Boundary

**A.5 FOOD PRODUCTS**

Annually samples, of three different types of broadleaf vegetation (edible portions), were collected when available during harvest at three locations. A gamma analysis was performed on the edible portions of each sample. The samples were collected from the locations listed below.

- Location 49 = 10.0 miles W or greater than 5 miles from plant (Control)

- Location 54 = 10.1 miles E Auburndale Plantation (if irrigating from Black Creek)
- Location 58 = Site varies from plant

**A.6 AQUATIC VEGETATION**

Annual samples were collected at each of the four locations. A gamma analysis was performed on each sample. The samples were collected from the locations listed below.

- Location 41 = 7.2 miles NNW Black Creek (upstream) – (Control)
- Location 45 = Site varies within Lake Robinson
- Location 46 = Site varies within Prestwood Lake
- Location 66 = Black Creek btwn Prestwood Lake discharge & upstream of Sonoco Spray Farm (downstream)

**A.7 FISH**

Semiannual samples of bottom feeders and free swimmers were collected at each of three locations. A gamma analysis was performed on the edible portions of each sample. The samples were collected from the locations listed below.

- Location 45 = Site varies within Lake Robinson
- Location 46 = Site varies within Prestwood Lake
- Location 47 = Control station, Any lake not influenced by plant discharge (Control)

**A.8 SHORELINE SEDIMENT**

Semiannual samples were collected at each of two locations. A gamma analysis was performed on each sample following the drying and removal of rocks and clams. The samples were collected from the locations listed below.

- Location 44 = 1.6 miles NNE East shore of lake, Shady Rest Club
- Location 57 = Ash Pond Shore

**A.9 BOTTOM SEDIMENT**

Annual samples were collected at each of the four locations. A gamma analysis was performed on each sample following the drying; the removal of rocks, clams, etc.; and grinding (if necessary). The samples were collected from the locations listed below.

Location 41	=	7.2 miles NNW Black Creek (upstream) – (Control)
Location 45	=	Site varies within Lake Robinson
Location 46	=	Site varies within Prestwood Lake
Location 66	=	Black Creek btwn Prestwood Lake discharge & upstream of Sonoco Spray Farm (downstream)

**A.10 DIRECT GAMMA RADIATION (TLD)**

Thermoluminescent dosimeters (TLD) were collected quarterly at forty-three locations. A gamma exposure rate was determined for each TLD. TLD locations are listed in Table 2.1-B. The TLDs were placed as indicated below.

- \* An inner ring of 25 TLDs, one in each meteorological sector in the general area of the site boundary.
- \* An outer ring of 17 TLDs, one in each meteorological sector in the 6 to 8 kilometer range.
- \* The remaining TLDs were placed in special interest areas such as population centers, residential areas, schools, and at a control location.

**A.11 ANNUAL LAND USE CENSUS**

An Annual Land Use Census was conducted to identify within a distance of 5.0 miles (8 kilometers) from the plant, the nearest location from the site boundary in each of the sixteen meteorological sectors, the following:

- \* The Nearest Residence
- \* The Nearest Garden greater than 500 square feet or 50 square meters, producing broadleaf vegetables (fresh leafy vegetables)
- \* The Nearest Milk-giving Animal (cow, goat, etc.)
- \* The Nearest Meat/Egg producing Animal (beef, hogs, chickens, etc.)



The census was conducted during the growing season in July of 2013. Results are shown in Table 3.11.3. No changes were made to the sampling procedures during 2013 as a result of the 2013 census.

**APPENDIX B**

**RADIOLOGICAL  
ENVIRONMENTAL MONITORING  
PROGRAM**

**SUMMARY OF RESULTS**

**2013**

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (HBRSEP)  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY**

H. B. Robinson Steam Electric Plant, Unit No. 2  
Darlington County, South Carolina

Docket Numbers: 50 - 261  
Calendar Year: 2013

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) <sup>(1)</sup>	All Indicator Locations Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>	Location w/Highest Annual Mean <sup>(2)</sup>		Control Locations Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>		
Air Particulate <sup>(4)</sup> (pCi/m <sup>3</sup> )	Gross Beta 519 <sup>(4)</sup>	See Table 2.2-C	1.82E-2 (467/467) 4.68E-3 – 3.56E-2	Loc. # 3 Microwave Tower 0.5 miles N	2.01E-2 (52/52) 7.64E-3 – 3.56E-2	Loc. # 1 1.74E-2 (52/52) 5.56E-3 – 2.97E-2	0
	Gamma 40	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
Air Cartridge/Radioiodine <sup>(4)</sup> (pCi/m <sup>3</sup> )	I-131 520 <sup>(4)</sup>	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
Aquatic Vegetation <sup>(6)</sup> (pCi/g, wet)	Gamma 4	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
Broadleaf Vegetation <sup>(4)(5)</sup> (pCi/g, wet)	Gamma 75 <sup>(4)(5)</sup> Cs-137	See Table 2.2-C	4.81E+1 (27/60) 1.70E+1 – 1.85E+2	Loc. # 51 Close to Site Boundary (BL-51) SSW	5.27E+1 (4/15) 3.85E+1 – 7.72E+1	Loc. # 52 5.31E+1 (8/15) 2.43E+1 – 1.62E+2	0
Fish Free-Swimmers (pCi/kg, wet)	Gamma 6 K-40	-----	3.08E+3 (4/4) 2.60E+3 – 3.62E+3	Loc. # 46 Site varies within Prestwood Lake	3.41E+3 (2/2) 3.20E+3 – 3.62E+3	Loc. # 47 3.15E+3 (2/2) 2.72E+3 – 3.57E+3	0
	Cs-137	See Table 2.2-C	3.69E+1 (4/4) 2.52E+1 – 5.15E+1	Loc. # 46 Site varies within Prestwood Lake	4.47E+1 (2/2) 3.79E+1 – 5.15E+1	Loc. # 47 5.97E+1 (2/2) 5.01E+1 – 6.93E+1	0
Fish Bottom-Feeders (pCi/kg, wet)	Gamma 6 K-40	-----	3.12E+3 (4/4) 2.66E+3 – 3.76E+3	Loc. # 46 Site varies within Prestwood Lake	3.40E+3 (2/2) 3.04E+3 – 3.76E+3	Loc. # 47 2.49E+3 (2/2) 2.18E+3 – 2.79E+3	0
	Cs-137	See Table 2.2-C	2.51E+1 (4/4) 2.30E+1 – 2.92E+1	Loc. # 46 Site varies within Prestwood Lake	2.61E+1 (2/2) 2.30E+1 – 2.92E+1	Loc. # 47 2.61E+1 (2/2) 2.22E+1 – 2.99E+1	0

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (HBRSEP)  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY (cont.)**

H. B. Robinson Steam Electric Plant, Unit No. 2  
Darlington County, South Carolina

Docket Numbers: 50 - 261  
Calendar Year: 2013

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) <sup>(1)</sup>	All Indicator Locations Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>	Location w/Highest Annual Mean <sup>(2)</sup>		Control Locations Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>		
Food Products <sup>(4)</sup> (pCi/kg, wet)	Gamma 3 <sup>(4)</sup> K-40	-----	3.53E+3 (2/2) 2.95E+3 – 4.11E+3	Loc # 54 Auburndale Plantation 10.1 miles E	4.11E+3 (1/1) Single Value	Loc # 49 3.73E+3 (1/1) Single Value	0
Ground Water <sup>(4)(9)</sup> (pCi/l)	Gamma 60 <sup>(4)(9)</sup>	See Table 2.2-C	All less than LLD	-----	-----	No Control	0
	Gross Beta 4	-----	1.81E+0 (4/4) 1.29E+0 – 3.04E+0	Loc # 82 (PDW-01) Entrance Rd. to U/1 0.3 miles SSE	1.81E+0 (4/4) 1.29E+0 – 3.04E+0	No Control	0
	I-131 6 <sup>(4)(9)</sup>	See Table 2.2-C	All less than LLD	-----	-----	No Control	0
	Tritium 60	2,000 <sup>(8)</sup>	5.85E+2 (25/60) 1.65E+2 – 1.69E+3	Loc # 79 (TS-07C) South corner by cove & Discharge Canal 1.0 mile N	1.46E+3 (4/4) 1.29E+3 – 1.69E+3	No Control	0
Shoreline Sediment (pCi/kg, dry)	Gamma 4	See Table 2.2-C	All less than LLD	-----	-----	No Control	0
Bottom Sediment <sup>(6)</sup> (pCi/kg, wet)	Gamma <sup>(6)</sup> 4 Cs-137	See Table 2.2-C	3.68E+2 (1/3) Single Value	Loc # 46 Site varies within Prestwood Lake	3.68E+2 (1/1) Single Value	Loc # 41 1.69E+2 (1/1) Single Value	0
Surface Water (pCi/l)	Gamma 48	See Table 2.2-C	All less than LLD	-----	-----	All less than LLD	0
	Tritium 48	2,000 <sup>(8)</sup>	2.66E+3 (25/36) 3.67E+2 – 7.48E+3	Loc # 40 Black Creek at Old Camden Rd. – Lake Robinson 0.6 miles ESE	3.14E+3 (12/12) 7.30E+2 – 7.48E+3	All less than LLD	0

**H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (HBRSEP)  
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM DATA SUMMARY (cont.)**

H. B. Robinson Steam Electric Plant, Unit No. 2  
Darlington County, South Carolina

Docket Numbers: 50 - 261  
Calendar Year: 2013

Medium or Pathway Sampled or Measured (Unit of Measurement)	Type and Total No. of Measurements Performed	Lower Limit of Detection (LLD) <sup>(1)</sup>	All Indicator Locations Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>	Location w/Highest Annual Mean <sup>(2)</sup>		Control Locations Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>	No. of Non-Routine Report Meas.
				Name, Distance, and Direction	Mean <sup>(2)(3)</sup> Range <sup>(2)</sup>		
Direct Radiation (TLD) (mR per quarter) <sup>(7)</sup>	TLD Readout 169 <sup>(4)</sup>	-----	1.37E+1 (165/165) 9.50E+0 – 2.69E+1	Loc. # 35 Kelly Bridge Road 4.5 miles SSW	2.12E+1 (4/4) 1.91E+1 – 2.69E+1	Loc. # 1 1.21E+1 (4/4) 1.20E+1 – 1.23E+1	0

## Footnotes to Appendix B

1. The Lower Limit of Detection (LLD) is the smallest concentration of radioactive material in a sample that will yield a net count above system background which will be detected with 95 percent probability and with only 5 percent probability of falsely concluding that a blank observation represents a "real" signal. Due to counting statistics and varying volumes, occasionally lower LLDs are achieved. Refer to Section 2.3.2 for an explanation of how LLD values were derived.
2. Mean and range are based on detectable measurements only.
3. The fractions of all samples with detectable activities at specific locations are indicated in parentheses.
4. Missing samples or surveillances are discussed in Appendix C or Appendix D.
5. Three types of broadleaf vegetation samples are collected monthly when available from four locations for a possible total of 144 samples.
6. Bottom sediment and aquatic vegetation sampling are not required by plant Offsite Dose Calculation Manual (ODCM). Sampling and analysis is performed to monitor any radionuclide accumulation in the lake.
7. TLD exposure is reported in milliroentgen (mR) per 90-day period (quarter) beginning in 1995. This is the exposure standard used to compare data to the Nuclear Regulatory Commission (NRC).
8. Tritium Lower Limit of Detection (LLD) is approximately  $2.50E+2$  pCi/L for samples that typically demonstrate activity less than the LLD. The LLD was lowered in order to maintain comparable LLD and result values with the NC Division of Radiation Protection (NCDRP) Laboratory.
9. Ground Water results for most of third quarter 2013 samples did not meet the required ODCM LLDs for I131 and BaLa-140 gammas and LLI-131 (Low-level I-131). Refer to Appendix D. These results are not part of the statistical summary.

**APPENDIX C**

**SAMPLING DEVIATIONS  
&  
UNAVAILABLE ANALYSES**

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# APPENDIX C

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## **H. B. ROBINSON NUCLEAR PLANT** **SAMPLING DEVIATIONS & UNAVAILABLE ANALYSES**

### **Air Cartridge and Air Particulates**

Any REMP weekly air samples (Air Cartridge – AC or Air Particulate – AP) that exceed 30 hours of down time in a surveillance period will be reported as a “missed surveillance”. However, this sample will still be counted and the data reported; whereas a “missed sample” will have no data reported. There was one missed sample in 2013 from the HBRSEP established air samplers. The air samplers operated for a total of 99.6% availability in 2013.

#### Missed Samples:

- AP-7; February 4 – February 11, 2013 – Down time was 170.1 hours. When collecting the weekly air particulate and iodine cartridge (radioiodine cartridge), the particulate filter was missing from the air sampler head assembly (CR # 588501).

#### Missed Surveillances:

- APAC-4; September 30 – October 7, 2013 and October 7 – 14, 2013 – Total down time was 130 hours. The air sampler was found not running for 107 hours of down time for sample collection week of September 30 – October 7, 2013. A work order was generated, but the sampler repair carried over into the next sampling period (October 7 – 14, 2013) for additional downtime of 23 hours (CR # 633568 / PIP # G-14-00434).

Other down times were identified that did not meet the definition of “missed surveillances.” Additional information of these events can be found in the corrective action program.

APAC-4 in March 2013 (CR # 593038)

APAC-1 in September 2013 (CR # 626315)

### **Broadleaf Vegetation**

Broadleaf vegetation (BL) samples were not available for sampling during the months of January, February, March, April, and December of 2013 due to the seasonal nature of broadleaf vegetation (CR # 582652, 588307, 594152, 599901, and 651749 / PIP # G-13-02283).



### **Thermoluminescent Dosimeters (TLDs)**

Three out of a possible 172 TLD samples (control and indicator locations), were missing during 2013.

TLD # 27      First Quarter 2013  
TLD # 27 was missing in the field. The area was searched, but the TLD could not be located (CR # 601951).

TLD # 28      First Quarter 2013  
TLD # 28 was missing in the field. The area was searched, but the TLD could not be located (CR # 601951).

TLD # 9        Second Quarter 2013  
TLD # 9 was missing in the field. The area was searched, but the TLD could not be located (CR #616846 / PIP # G-13-01474).

**APPENDIX D**

**ANALYTICAL DEVIATIONS**

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# APPENDIX D

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## H. B. ROBINSON NUCLEAR PLANT

### ANALYTICAL DEVIATIONS

#### Ground Water

Missed Surveillances: Third Quarter 2013 Detection Limits Not Achieved

- Some I-131 and BaLa-140 detection limits of third quarter 2013 RNP Ground water (GW) samples were not achieved by gamma spectroscopy testing. The GW samples were collected August 13, 14, and 15, 2013 and arrived at the EnRad Laboratory September 24, 2013. The hold time (time from collection to time of analysis) was at best 40 days. A typical I-131 hold time is eight (8) days (Iodine-131 goes through a half-life decay about every 8.04 days); therefore, the samples upon arrival at EnRad Laboratory had already gone through approximately five (5) half-lives of decay for the I-131 activity. Discussion with plant personnel determined that the GW samples were collected the week of August 13, 2013, and then the GW samples were held for an undetermined reason at the Robinson Plant, thus not being submitted to the EnRad Laboratory in a timely manner. Robinson personnel indicated the GW wells listed do not have a history of detection of the nuclides (I-131 and BaLa-140). The EnRad Laboratory analyzed the samples for maximum gamma acquisition times to attempt to achieve best possible detection limits, but excessive hold times of 40 days or more made achieving the detection limits impossible. The gamma detection limits (I-131 15 pCi/L, BaLa-140 15 pCi/L, and low level I-131 [LLI-131] 1.0 pCi/L) were not achieved for the specific samples listed below and the results for these missed GW LLDs appear in Appendix E. This is in violation of the sampling requirements and the stated LLD requirements described in the H.B. Robinson Nuclear Plant ODCM (CR # 634509 / PIP # G-13-01765).

I-131 detection limit not achieved:

GW-71

I-131, BaLa-140, and LLI-131 detection limits were not achieved:

GW-68 and GW-82

I-131 and BaLa-140 detection limits were not achieved:

GW-42, 64, 69, 70, 72, 73, 75 – 79, 81, and PSW-05

**APPENDIX E**

**RADIOLOGICAL  
ENVIRONMENTAL MONITORING  
PROGRAM RESULTS**

**2013**

This appendix includes sample analysis report summaries and supportive data generated from each sample medium for 2013.

# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178076	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	1.14E-01	2.37E-02	
185455	1/7/2013 - 1/7/2013	Beta	2.92E-02	2.43E-03	1.51E-03
185472	1/14/2013 - 1/14/2013	Beta	2.31E-02	2.09E-03	1.32E-03
185489	1/21/2013 - 1/21/2013	Beta	2.07E-02	2.05E-03	1.52E-03
185506	1/28/2013 - 1/28/2013	Beta	2.97E-02	2.41E-03	1.59E-03
185523	2/4/2013 - 2/4/2013	Beta	2.60E-02	2.26E-03	1.49E-03
185540	2/11/2013 - 2/11/2013	Beta	2.02E-02	2.11E-03	1.50E-03
185556	2/18/2013 - 2/18/2013	Beta	1.97E-02	1.97E-03	1.42E-03
185573	2/25/2013 - 2/25/2013	Beta	1.63E-02	1.97E-03	1.60E-03
185590	3/4/2013 - 3/4/2013	Beta	1.65E-02	1.84E-03	1.41E-03
185607	3/11/2013 - 3/11/2013	Beta	1.39E-02	1.91E-03	1.69E-03
185624	3/18/2013 - 3/18/2013	Beta	2.21E-02	2.10E-03	1.49E-03
185641	3/24/2013 - 3/24/2013	Beta	2.20E-02	2.33E-03	1.83E-03
185658	4/1/2013 - 4/1/2013	Beta	1.49E-02	1.76E-03	1.48E-03
256288	4/1/2013 - 4/8/2013	Beta	1.76E-02	1.29E-03	2.73E-03
256341	4/8/2013 - 4/15/2013	Beta	1.24E-02	1.19E-03	2.83E-03
257131	4/22/2013 - 4/29/2013	Beta	1.43E-02	1.27E-03	3.03E-03
257239	4/15/2013 - 4/22/2013	Beta	1.29E-02	1.19E-03	2.76E-03
257284	4/29/2013 - 5/6/2013	Beta	8.26E-03	1.18E-03	3.18E-03
257731	5/6/2013 - 5/13/2013	Beta	1.49E-02	1.25E-03	2.75E-03
257975	5/13/2013 - 5/20/2013	Beta	2.47E-02	1.45E-03	2.68E-03
258210	5/20/2013 - 5/26/2013	Beta	1.30E-02	1.34E-03	3.21E-03
258557	5/26/2013 - 6/3/2013	Beta	1.19E-02	1.08E-03	2.53E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259027	6/3/2013 - 6/10/2013	Beta	9.34E-03	1.10E-03	2.78E-03
259575	6/10/2013 - 6/18/2013	Beta	1.52E-02	1.14E-03	2.39E-03
260209	6/18/2013 - 6/24/2013	Beta	1.04E-02	1.29E-03	3.33E-03
260669	7/1/2013 - 7/8/2013	Beta	5.56E-03	9.50E-04	2.62E-03
261632	7/8/2013 - 7/15/2013	Beta	8.97E-03	1.10E-03	2.81E-03
261956	6/24/2013 - 7/1/2013	Beta	1.54E-02	1.21E-03	2.46E-03
262134	7/15/2013 - 7/22/2013	Beta	7.51E-03	1.03E-03	2.73E-03
262731	4/1/2013 - 7/1/2013	I-131	<3.06E-02	0.00E+00	3.06E-02
		Cs-134	<3.56E-04	0.00E+00	3.56E-04
		Cs-137	<4.01E-04	0.00E+00	4.01E-04
		Be-7	1.23E-01	5.87E-03	5.10E-03
		K-40	1.14E-02	2.04E-03	3.30E-03
263207	7/22/2013 - 7/29/2013	Beta	1.73E-02	1.30E-03	2.74E-03
263422	7/29/2013 - 8/5/2013	Beta	1.95E-02	1.36E-03	2.87E-03
264077	8/5/2013 - 8/12/2013	Beta	1.44E-02	1.30E-03	3.08E-03
265211	8/12/2013 - 8/20/2013	Beta	1.20E-02	9.99E-04	2.13E-03
265531	8/20/2013 - 8/26/2013	Beta	1.10E-02	1.27E-03	3.12E-03
267206	8/26/2013 - 9/3/2013	Beta	2.48E-02	1.44E-03	2.77E-03
267676	9/3/2013 - 9/9/2013	Beta	2.57E-02	1.87E-03	3.97E-03
268516	9/9/2013 - 9/16/2013	Beta	2.73E-02	1.52E-03	2.79E-03
269686	9/16/2013 - 9/23/2013	Beta	2.04E-02	1.40E-03	2.82E-03
270781	9/23/2013 - 9/30/2013	Beta	1.45E-02	1.23E-03	2.77E-03
271503	9/30/2013 - 10/7/2013	Beta	2.33E-02	1.42E-03	2.64E-03
272113	10/7/2013 - 10/14/2013	Beta	1.13E-02	1.11E-03	2.55E-03
272508	10/14/2013 - 10/21/2013	Beta	2.00E-02	1.35E-03	2.66E-03
272659	7/1/2013 - 9/30/2013	I-131	<6.88E-02	0.00E+00	6.88E-02
		Cs-134	<6.66E-04	0.00E+00	6.66E-04
		Cs-137	<6.22E-04	0.00E+00	6.22E-04
		Be-7	1.16E-01	7.28E-03	1.07E-02
		K-40	2.38E-02	4.34E-03	4.66E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272896	10/21/2013 - 10/28/2013	Beta	2.37E-02	1.49E-03	2.97E-03
273984	10/28/2013 - 11/4/2013	Beta	2.77E-02	1.57E-03	2.94E-03
274434	11/4/2013 - 11/11/2013	Beta	1.32E-02	1.24E-03	2.92E-03
274959	11/11/2013 - 11/18/2013	Beta	1.63E-02	1.29E-03	2.71E-03
276502	11/18/2013 - 11/25/2013	Beta	1.62E-02	1.28E-03	2.76E-03
278767	11/25/2013 - 12/2/2013	Beta	1.97E-02	1.39E-03	2.84E-03
278838	12/2/2013 - 12/9/2013	Beta	1.54E-02	1.27E-03	2.83E-03
279078	12/9/2013 - 12/16/2013	Beta	2.06E-02	1.37E-03	2.70E-03
279706	12/16/2013 - 12/23/2013	Beta	1.76E-02	1.32E-03	2.74E-03
280195	12/23/2013 - 12/30/2013	Beta	1.66E-02	1.33E-03	2.92E-03
280611	9/30/2013 - 12/30/2013	Cs-134	<2.45E-04	0.00E+00	2.45E-04
		Cs-137	<3.04E-04	0.00E+00	3.04E-04
		Be-7	9.05E-02	5.07E-03	5.08E-03
		K-40	6.78E-03	1.76E-03	3.56E-03

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178077	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	9.64E-02	2.39E-02	
		K-40	3.09E-02	1.47E-02	
185456	1/7/2013 - 1/7/2013	Beta	2.72E-02	2.36E-03	1.52E-03
185473	1/14/2013 - 1/14/2013	Beta	2.34E-02	1.99E-03	1.20E-03
185490	1/21/2013 - 1/21/2013	Beta	2.52E-02	2.56E-03	1.92E-03
185507	1/28/2013 - 1/28/2013	Beta	2.87E-02	2.27E-03	1.47E-03
185524	2/4/2013 - 2/4/2013	Beta	2.63E-02	2.20E-03	1.42E-03
185541	2/11/2013 - 2/11/2013	Beta	2.23E-02	2.02E-03	1.38E-03
185557	2/18/2013 - 2/18/2013	Beta	2.16E-02	2.16E-03	1.56E-03
185574	2/25/2013 - 2/25/2013	Beta	1.85E-02	1.91E-03	1.39E-03
185591	3/4/2013 - 3/4/2013	Beta	1.72E-02	1.77E-03	1.29E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185608	3/11/2013 - 3/11/2013	Beta	1.48E-02	1.82E-03	1.51E-03
185625	3/18/2013 - 3/18/2013	Beta	2.50E-02	2.22E-03	1.49E-03
185642	3/24/2013 - 3/24/2013	Beta	2.12E-02	2.26E-03	1.78E-03
185659	4/1/2013 - 4/1/2013	Beta	1.66E-02	1.73E-03	1.35E-03
256279	4/1/2013 - 4/8/2013	Beta	1.84E-02	1.33E-03	2.78E-03
256342	4/8/2013 - 4/15/2013	Beta	1.53E-02	1.24E-03	2.75E-03
257132	4/22/2013 - 4/29/2013	Beta	1.23E-02	1.23E-03	3.02E-03
257237	4/15/2013 - 4/22/2013	Beta	1.44E-02	1.28E-03	2.91E-03
257285	4/29/2013 - 5/6/2013	Beta	8.43E-03	1.11E-03	2.95E-03
257732	5/6/2013 - 5/13/2013	Beta	1.48E-02	1.23E-03	2.71E-03
257976	5/13/2013 - 5/20/2013	Beta	2.65E-02	1.51E-03	2.74E-03
258211	5/20/2013 - 5/26/2013	Beta	1.19E-02	1.32E-03	3.25E-03
258558	5/26/2013 - 6/3/2013	Beta	1.49E-02	1.16E-03	2.56E-03
259028	6/3/2013 - 6/10/2013	Beta	1.12E-02	1.16E-03	2.77E-03
259576	6/10/2013 - 6/18/2013	Beta	1.47E-02	1.13E-03	2.43E-03
260210	6/18/2013 - 6/24/2013	Beta	1.31E-02	1.40E-03	3.46E-03
260670	7/1/2013 - 7/8/2013	Beta	9.18E-03	1.08E-03	2.70E-03
261633	7/8/2013 - 7/15/2013	Beta	9.69E-03	1.09E-03	2.72E-03
261957	6/24/2013 - 7/1/2013	Beta	1.60E-02	1.21E-03	2.42E-03
262135	7/15/2013 - 7/22/2013	Beta	1.02E-02	1.16E-03	2.89E-03
262732	4/1/2013 - 7/1/2013	I-131	<2.60E-02	0.00E+00	2.60E-02
		Cs-134	<2.39E-04	0.00E+00	2.39E-04
		Cs-137	<3.53E-04	0.00E+00	3.53E-04
		Be-7	1.38E-01	5.42E-03	4.58E-03
		K-40	1.92E-02	2.05E-03	3.30E-03
263208	7/22/2013 - 7/29/2013	Beta	1.56E-02	1.24E-03	2.68E-03
263423	7/29/2013 - 8/5/2013	Beta	2.27E-02	1.50E-03	3.07E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
264078	8/5/2013 - 8/12/2013	Beta	1.67E-02	1.36E-03	3.11E-03
265212	8/12/2013 - 8/20/2013	Beta	1.14E-02	1.00E-03	2.19E-03
265532	8/20/2013 - 8/26/2013	Beta	1.31E-02	1.33E-03	3.14E-03
267207	8/26/2013 - 9/3/2013	Beta	2.60E-02	1.42E-03	2.64E-03
267677	9/3/2013 - 9/9/2013	Beta	2.73E-02	1.71E-03	3.35E-03
268517	9/9/2013 - 9/16/2013	Beta	3.23E-02	1.63E-03	2.83E-03
269687	9/16/2013 - 9/23/2013	Beta	2.54E-02	1.52E-03	2.87E-03
270782	9/23/2013 - 9/30/2013	Beta	1.84E-02	1.34E-03	2.82E-03
271504	9/30/2013 - 10/7/2013	Beta	2.85E-02	1.54E-03	2.67E-03
272114	10/7/2013 - 10/14/2013	Beta	1.33E-02	1.22E-03	2.75E-03
272509	10/14/2013 - 10/21/2013	Beta	2.11E-02	1.34E-03	2.56E-03
272660	7/1/2013 - 9/30/2013	I-131	<3.30E-02	0.00E+00	3.30E-02
		Cs-134	<2.48E-04	0.00E+00	2.48E-04
		Cs-137	<2.73E-04	0.00E+00	2.73E-04
		Be-7	1.13E-01	4.96E-03	4.64E-03
		K-40	2.21E-02	2.45E-03	2.90E-03
272897	10/21/2013 - 10/28/2013	Beta	2.56E-02	1.51E-03	2.91E-03
273985	10/28/2013 - 11/4/2013	Beta	2.92E-02	1.60E-03	2.93E-03
274435	11/4/2013 - 11/11/2013	Beta	1.50E-02	1.27E-03	2.89E-03
274960	11/11/2013 - 11/18/2013	Beta	1.73E-02	1.30E-03	2.68E-03
276503	11/18/2013 - 11/25/2013	Beta	1.78E-02	1.33E-03	2.78E-03
278768	11/25/2013 - 12/2/2013	Beta	2.22E-02	1.39E-03	2.64E-03
278839	12/2/2013 - 12/9/2013	Beta	1.76E-02	1.35E-03	2.90E-03
279079	12/9/2013 - 12/16/2013	Beta	2.30E-02	1.42E-03	2.67E-03
279707	12/16/2013 - 12/23/2013	Beta	1.90E-02	1.38E-03	2.81E-03
280196	12/23/2013 - 12/30/2013	Beta	1.96E-02	1.41E-03	2.93E-03
280612	9/30/2013 - 12/30/2013	Cs-134	<3.14E-04	0.00E+00	3.14E-04
		Cs-137	<3.33E-04	0.00E+00	3.33E-04

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

## Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
280612	9/30/2013 - 12/30/2013	Be-7	1.01E-01	5.36E-03	4.57E-03
		K-40	9.12E-03	1.90E-03	3.53E-03

## Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178078	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	1.20E-01	2.47E-02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185457	1/7/2013 - 1/7/2013	Beta	3.40E-02	2.44E-03	1.36E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185474	1/14/2013 - 1/14/2013	Beta	2.99E-02	2.26E-03	1.24E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185491	1/21/2013 - 1/21/2013	Beta	2.43E-02	2.35E-03	1.71E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185508	1/28/2013 - 1/28/2013	Beta	3.56E-02	2.74E-03	1.74E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185525	2/4/2013 - 2/4/2013	Beta	3.01E-02	2.57E-03	1.68E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185542	2/11/2013 - 2/11/2013	Beta	2.59E-02	2.36E-03	1.62E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185558	2/18/2013 - 2/18/2013	Beta	2.09E-02	2.24E-03	1.69E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185575	2/25/2013 - 2/25/2013	Beta	1.89E-02	1.97E-03	1.45E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185592	3/4/2013 - 3/4/2013	Beta	1.91E-02	1.99E-03	1.45E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185609	3/11/2013 - 3/11/2013	Beta	1.81E-02	1.93E-03	1.47E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185626	3/18/2013 - 3/18/2013	Beta	2.92E-02	2.40E-03	1.53E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185643	3/24/2013 - 3/24/2013	Beta	2.40E-02	2.38E-03	1.79E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185660	4/1/2013 - 4/1/2013	Beta	1.87E-02	1.86E-03	1.40E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256280	4/1/2013 - 4/8/2013	Beta	2.09E-02	1.40E-03	2.85E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256343	4/8/2013 - 4/15/2013	Beta	1.98E-02	1.40E-03	2.91E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257133	4/22/2013 - 4/29/2013	Beta	1.82E-02	1.39E-03	3.10E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257238	4/15/2013 - 4/22/2013	Beta	1.46E-02	1.28E-03	2.87E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257286	4/29/2013 - 5/6/2013	Beta	8.88E-03	1.15E-03	3.03E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257733	5/6/2013 - 5/13/2013	Beta	1.85E-02	1.33E-03	2.74E-03

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257977	5/13/2013 - 5/20/2013	Beta	3.18E-02	1.64E-03	2.80E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258212	5/20/2013 - 5/26/2013	Beta	1.34E-02	1.37E-03	3.27E-03
258559	5/26/2013 - 6/3/2013	Beta	1.46E-02	1.15E-03	2.53E-03
259029	6/3/2013 - 6/10/2013	Beta	1.15E-02	1.18E-03	2.82E-03
259577	6/10/2013 - 6/18/2013	Beta	1.60E-02	1.18E-03	2.46E-03
260211	6/18/2013 - 6/24/2013	Beta	1.25E-02	1.37E-03	3.40E-03
260671	7/1/2013 - 7/8/2013	Beta	7.64E-03	1.05E-03	2.74E-03
261634	7/8/2013 - 7/15/2013	Beta	7.83E-03	1.06E-03	2.80E-03
261959	6/24/2013 - 7/1/2013	Beta	1.63E-02	1.23E-03	2.45E-03
262136	7/15/2013 - 7/22/2013	Beta	8.85E-03	1.09E-03	2.80E-03
262733	4/1/2013 - 7/1/2013	I-131	<2.52E-02	0.00E+00	2.52E-02
		Cs-134	<2.45E-04	0.00E+00	2.45E-04
		Cs-137	<2.52E-04	0.00E+00	2.52E-04
		Be-7	1.42E-01	5.28E-03	3.91E-03
		K-40	1.86E-02	2.37E-03	3.01E-03
263209	7/22/2013 - 7/29/2013	Beta	1.70E-02	1.31E-03	2.79E-03
263424	7/29/2013 - 8/5/2013	Beta	2.17E-02	1.46E-03	3.03E-03
264079	8/5/2013 - 8/12/2013	Beta	1.49E-02	1.30E-03	3.04E-03
265213	8/12/2013 - 8/20/2013	Beta	1.07E-02	1.00E-03	2.23E-03
265533	8/20/2013 - 8/26/2013	Beta	1.32E-02	1.32E-03	3.09E-03
267208	8/26/2013 - 9/3/2013	Beta	2.83E-02	1.47E-03	2.65E-03
267678	9/3/2013 - 9/9/2013	Beta	2.99E-02	1.76E-03	3.33E-03
268518	9/9/2013 - 9/16/2013	Beta	3.51E-02	1.70E-03	2.90E-03
269688	9/16/2013 - 9/23/2013	Beta	2.16E-02	1.43E-03	2.83E-03
270783	9/23/2013 - 9/30/2013	Beta	1.62E-02	1.32E-03	2.93E-03
271505	9/30/2013 - 10/7/2013	Beta	3.00E-02	1.58E-03	2.69E-03
272115	10/7/2013 - 10/14/2013	Beta	1.12E-02	1.10E-03	2.55E-03
272510	10/14/2013 - 10/21/2013	Beta	2.14E-02	1.40E-03	2.70E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272661	7/1/2013 - 9/30/2013	I-131	<2.90E-02	0.00E+00	2.90E-02
		Cs-134	<2.25E-04	0.00E+00	2.25E-04
		Cs-137	<3.91E-04	0.00E+00	3.91E-04
		Be-7	1.10E-01	5.40E-03	4.72E-03
		K-40	<7.06E-03	0.00E+00	7.06E-03
272898	10/21/2013 - 10/28/2013	Beta	2.71E-02	1.57E-03	2.98E-03
273986	10/28/2013 - 11/4/2013	Beta	3.06E-02	1.64E-03	2.95E-03
274436	11/4/2013 - 11/11/2013	Beta	1.66E-02	1.32E-03	2.91E-03
274961	11/11/2013 - 11/18/2013	Beta	1.72E-02	1.33E-03	2.79E-03
276504	11/18/2013 - 11/25/2013	Beta	1.81E-02	1.34E-03	2.80E-03
278769	11/25/2013 - 12/2/2013	Beta	2.07E-02	1.38E-03	2.72E-03
278840	12/2/2013 - 12/9/2013	Beta	1.59E-02	1.30E-03	2.90E-03
279080	12/9/2013 - 12/16/2013	Beta	2.21E-02	1.41E-03	2.71E-03
279708	12/16/2013 - 12/23/2013	Beta	1.94E-02	1.39E-03	2.80E-03
280197	12/23/2013 - 12/30/2013	Beta	1.86E-02	1.35E-03	2.84E-03
280613	9/30/2013 - 12/30/2013	Cs-134	<1.89E-04	0.00E+00	1.89E-04
		Cs-137	<2.25E-04	0.00E+00	2.25E-04
		Be-7	1.09E-01	4.38E-03	4.50E-03
		K-40	2.15E-02	2.26E-03	2.62E-03

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178079	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	1.06E-01	2.23E-02	
185458	1/7/2013 - 1/7/2013	Beta	2.63E-02	2.20E-03	1.38E-03
185475	1/14/2013 - 1/14/2013	Beta	2.68E-02	2.18E-03	1.26E-03
185492	1/21/2013 - 1/21/2013	Beta	2.03E-02	2.02E-03	1.50E-03
185509	1/28/2013 - 1/28/2013	Beta	2.76E-02	2.29E-03	1.53E-03
185526	2/4/2013 - 2/4/2013	Beta	2.66E-02	2.26E-03	1.47E-03
185543	2/11/2013 - 2/11/2013	Beta	2.13E-02	2.02E-03	1.43E-03
185559	2/18/2013 - 2/18/2013	Beta	1.73E-02	1.88E-03	1.43E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185576	2/25/2013 - 2/25/2013	Beta	1.70E-02	1.84E-03	1.38E-03
185593	3/4/2013 - 3/4/2013	Beta	1.56E-02	1.78E-03	1.37E-03
185610	3/11/2013 - 3/11/2013	Beta	1.42E-02	1.77E-03	1.48E-03
185627	3/18/2013 - 3/18/2013	Beta	2.35E-02	2.10E-03	1.43E-03
185644	3/24/2013 - 3/24/2013	Beta	2.21E-02	2.25E-03	1.72E-03
185661	4/1/2013 - 4/1/2013	Beta	1.54E-02	1.65E-03	1.30E-03
256281	4/1/2013 - 4/8/2013	Beta	1.81E-02	1.28E-03	2.67E-03
256344	4/8/2013 - 4/15/2013	Beta	1.59E-02	1.25E-03	2.74E-03
257134	4/22/2013 - 4/29/2013	Beta	1.51E-02	1.24E-03	2.85E-03
257240	4/15/2013 - 4/22/2013	Beta	1.27E-02	1.12E-03	2.52E-03
257287	4/29/2013 - 5/6/2013	Beta	7.24E-03	1.08E-03	2.95E-03
257734	5/6/2013 - 5/13/2013	Beta	1.52E-02	1.30E-03	2.89E-03
257978	5/13/2013 - 5/20/2013	Beta	2.41E-02	1.37E-03	2.50E-03
258213	5/20/2013 - 5/26/2013	Beta	1.11E-02	1.29E-03	3.21E-03
258560	5/26/2013 - 6/3/2013	Beta	1.31E-02	1.09E-03	2.46E-03
259030	6/3/2013 - 6/10/2013	Beta	1.01E-02	1.14E-03	2.83E-03
259578	6/10/2013 - 6/18/2013	Beta	1.37E-02	1.12E-03	2.48E-03
260212	6/18/2013 - 6/24/2013	Beta	1.06E-02	1.36E-03	3.56E-03
260672	7/1/2013 - 7/8/2013	Beta	4.68E-03	9.59E-04	2.74E-03
261635	7/8/2013 - 7/15/2013	Beta	8.58E-03	1.08E-03	2.78E-03
261958	6/24/2013 - 7/1/2013	Beta	1.54E-02	1.21E-03	2.48E-03
262137	7/15/2013 - 7/22/2013	Beta	9.40E-03	1.15E-03	2.94E-03
262734	4/1/2013 - 7/1/2013	I-131	<2.62E-02	0.00E+00	2.62E-02
		Cs-134	<1.43E-04	0.00E+00	1.43E-04
		Cs-137	<1.59E-04	0.00E+00	1.59E-04
		Be-7	1.27E-01	2.74E-03	2.37E-03
		K-40	2.14E-02	1.29E-03	1.55E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
263210	7/22/2013 - 7/29/2013	Beta	1.57E-02	1.26E-03	2.74E-03
263425	7/29/2013 - 8/5/2013	Beta	1.79E-02	1.40E-03	3.12E-03
264080	8/5/2013 - 8/12/2013	Beta	1.39E-02	1.32E-03	3.16E-03
265214	8/12/2013 - 8/20/2013	Beta	1.35E-02	1.08E-03	2.26E-03
265534	8/20/2013 - 8/26/2013	Beta	1.29E-02	1.34E-03	3.19E-03
267209	8/26/2013 - 9/3/2013	Beta	2.49E-02	1.42E-03	2.70E-03
267679	9/3/2013 - 9/9/2013	Beta	2.69E-02	1.72E-03	3.41E-03
268519	9/9/2013 - 9/16/2013	Beta	2.98E-02	1.60E-03	2.90E-03
269689	9/16/2013 - 9/23/2013	Beta	2.06E-02	1.44E-03	2.94E-03
270784	9/23/2013 - 9/30/2013	Beta	1.55E-02	1.30E-03	2.92E-03
271506	9/30/2013 - 10/3/2013	Beta	3.03E-02	3.56E-03	8.87E-03
272116	10/7/2013 - 10/14/2013	Beta	2.56E-02	2.88E-03	7.00E-03
272511	10/14/2013 - 10/21/2013	Beta	1.64E-02	1.30E-03	2.78E-03
272662	7/1/2013 - 9/30/2013	I-131	<2.86E-02	0.00E+00	2.86E-02
		Cs-134	<2.70E-04	0.00E+00	2.70E-04
		Cs-137	<2.89E-04	0.00E+00	2.89E-04
		Be-7	1.10E-01	4.67E-03	4.71E-03
		K-40	2.34E-02	2.21E-03	2.60E-03
272899	10/21/2013 - 10/28/2013	Beta	2.45E-02	1.53E-03	3.05E-03
273987	10/28/2013 - 11/4/2013	Beta	2.61E-02	1.56E-03	2.99E-03
274437	11/4/2013 - 11/11/2013	Beta	1.44E-02	1.27E-03	2.95E-03
274962	11/11/2013 - 11/18/2013	Beta	1.79E-02	1.36E-03	2.81E-03
276505	11/18/2013 - 11/25/2013	Beta	1.64E-02	1.33E-03	2.88E-03
278770	11/25/2013 - 12/2/2013	Beta	1.66E-02	1.30E-03	2.78E-03
278841	12/2/2013 - 12/9/2013	Beta	1.53E-02	1.32E-03	2.99E-03
279081	12/9/2013 - 12/16/2013	Beta	1.96E-02	1.38E-03	2.79E-03
279709	12/16/2013 - 12/23/2013	Beta	1.77E-02	1.36E-03	2.88E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

## Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
280198	12/23/2013 - 12/30/2013	Beta	1.73E-02	1.36E-03	2.96E-03
280614	9/30/2013 - 12/30/2013	Cs-134	<3.42E-04	0.00E+00	3.42E-04
		Cs-137	<3.38E-04	0.00E+00	3.38E-04
		Be-7	1.02E-01	5.28E-03	4.35E-03
		K-40	6.67E-03	2.55E-03	4.77E-03

## Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178080	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	1.04E-01	2.27E-02	
185459	1/7/2013 - 1/7/2013	Beta	2.73E-02	2.25E-03	1.39E-03
185476	1/14/2013 - 1/14/2013	Beta	2.34E-02	2.06E-03	1.27E-03
185493	1/21/2013 - 1/21/2013	Beta	1.91E-02	1.98E-03	1.51E-03
185510	1/28/2013 - 1/28/2013	Beta	3.07E-02	2.40E-03	1.54E-03
185527	2/4/2013 - 2/4/2013	Beta	2.40E-02	2.18E-03	1.49E-03
185544	2/11/2013 - 2/11/2013	Beta	2.11E-02	2.02E-03	1.44E-03
185560	2/18/2013 - 2/18/2013	Beta	1.44E-02	1.71E-03	1.38E-03
185577	2/25/2013 - 2/25/2013	Beta	1.63E-02	1.81E-03	1.39E-03
185594	3/4/2013 - 3/4/2013	Beta	1.43E-02	1.71E-03	1.37E-03
185611	3/11/2013 - 3/11/2013	Beta	1.46E-02	1.78E-03	1.47E-03
185628	3/18/2013 - 3/18/2013	Beta	2.53E-02	2.28E-03	1.55E-03
185645	3/24/2013 - 3/24/2013	Beta	2.15E-02	2.34E-03	1.86E-03
185662	4/1/2013 - 4/1/2013	Beta	1.54E-02	1.74E-03	1.43E-03
256282	4/1/2013 - 4/8/2013	Beta	1.84E-02	1.37E-03	2.94E-03
256345	4/8/2013 - 4/15/2013	Beta	1.43E-02	1.24E-03	2.84E-03
257135	4/22/2013 - 4/29/2013	Beta	1.53E-02	1.34E-03	3.18E-03
257241	4/15/2013 - 4/22/2013	Beta	1.33E-02	1.14E-03	2.55E-03
257288	4/29/2013 - 5/6/2013	Beta	8.61E-03	1.15E-03	3.08E-03
257735	5/6/2013 - 5/13/2013	Beta	1.57E-02	1.29E-03	2.83E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257979	5/13/2013 - 5/20/2013	Beta	2.50E-02	1.51E-03	2.83E-03
258214	5/20/2013 - 5/26/2013	Beta	1.22E-02	1.37E-03	3.38E-03
258561	5/26/2013 - 6/3/2013	Beta	1.56E-02	1.19E-03	2.61E-03
259031	6/3/2013 - 6/10/2013	Beta	1.18E-02	1.22E-03	2.93E-03
259579	6/10/2013 - 6/18/2013	Beta	1.44E-02	1.16E-03	2.53E-03
260213	6/18/2013 - 6/24/2013	Beta	1.32E-02	1.42E-03	3.53E-03
260673	7/1/2013 - 7/8/2013	Beta	7.61E-03	1.06E-03	2.79E-03
261636	7/8/2013 - 7/15/2013	Beta	9.11E-03	1.12E-03	2.88E-03
261960	6/24/2013 - 7/1/2013	Beta	1.38E-02	1.18E-03	2.51E-03
262138	7/15/2013 - 7/22/2013	Beta	9.52E-03	1.17E-03	2.99E-03
262735	4/1/2013 - 7/1/2013	I-131	<3.56E-02	0.00E+00	3.56E-02
		Cs-134	<3.38E-04	0.00E+00	3.38E-04
		Cs-137	<4.30E-04	0.00E+00	4.30E-04
		Be-7	1.38E-01	6.69E-03	5.96E-03
		K-40	1.70E-02	2.53E-03	1.02E-03
263211	7/22/2013 - 7/29/2013	Beta	1.75E-02	1.35E-03	2.88E-03
263426	7/29/2013 - 8/5/2013	Beta	2.02E-02	1.45E-03	3.10E-03
264081	8/5/2013 - 8/12/2013	Beta	1.41E-02	1.33E-03	3.22E-03
265215	8/12/2013 - 8/20/2013	Beta	9.98E-03	9.89E-04	2.26E-03
265535	8/20/2013 - 8/26/2013	Beta	1.18E-02	1.32E-03	3.23E-03
267210	8/26/2013 - 9/3/2013	Beta	2.73E-02	1.47E-03	2.73E-03
267680	9/3/2013 - 9/9/2013	Beta	2.73E-02	1.73E-03	3.44E-03
268520	9/9/2013 - 9/16/2013	Beta	2.75E-02	1.57E-03	2.94E-03
269690	9/16/2013 - 9/23/2013	Beta	2.13E-02	1.47E-03	2.98E-03
270785	9/23/2013 - 9/30/2013	Beta	1.85E-02	1.49E-03	3.26E-03
271507	9/30/2013 - 10/7/2013	Beta	2.48E-02	1.50E-03	2.77E-03
272117	10/7/2013 - 10/14/2013	Beta	9.62E-03	1.08E-03	2.61E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

## Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272512	10/14/2013 - 10/21/2013	Beta	1.94E-02	1.37E-03	2.78E-03
272663	7/1/2013 - 9/30/2013	I-131	<3.15E-02	0.00E+00	3.15E-02
		Cs-134	<3.09E-04	0.00E+00	3.09E-04
		Cs-137	<2.98E-04	0.00E+00	2.98E-04
		Be-7	1.08E-01	5.60E-03	5.08E-03
		K-40	1.00E-02	1.83E-03	2.53E-03
272900	10/21/2013 - 10/28/2013	Beta	2.48E-02	1.53E-03	3.03E-03
273988	10/28/2013 - 11/4/2013	Beta	2.64E-02	1.57E-03	3.02E-03
274438	11/4/2013 - 11/11/2013	Beta	1.68E-02	1.34E-03	2.98E-03
274963	11/11/2013 - 11/18/2013	Beta	1.47E-02	1.26E-03	2.76E-03
276506	11/18/2013 - 11/25/2013	Beta	1.73E-02	1.35E-03	2.88E-03
278771	11/25/2013 - 12/2/2013	Beta	1.60E-02	1.27E-03	2.74E-03
278842	12/2/2013 - 12/9/2013	Beta	1.60E-02	1.33E-03	2.96E-03
279082	12/9/2013 - 12/16/2013	Beta	1.90E-02	1.35E-03	2.77E-03
279710	12/16/2013 - 12/23/2013	Beta	1.56E-02	1.31E-03	2.89E-03
280199	12/23/2013 - 12/30/2013	Beta	1.64E-02	1.34E-03	2.96E-03
280615	9/30/2013 - 12/30/2013	Cs-134	<2.51E-04	0.00E+00	2.51E-04
		Cs-137	<3.00E-04	0.00E+00	3.00E-04
		Be-7	9.12E-02	4.91E-03	3.98E-03
		K-40	8.44E-03	1.66E-03	3.00E-03

## Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178081	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	1.25E-01	2.48E-02	
		K-40	2.56E-02	1.29E-02	
		Bi-214	1.54E-03	1.13E-03	
185460	1/7/2013 - 1/7/2013	Beta	2.57E-02	2.17E-03	1.36E-03
185477	1/14/2013 - 1/14/2013	Beta	2.36E-02	2.05E-03	1.25E-03
185494	1/21/2013 - 1/21/2013	Beta	2.05E-02	2.02E-03	1.48E-03
185511	1/28/2013 - 1/28/2013	Beta	2.98E-02	2.35E-03	1.52E-03
185528	2/4/2013 - 2/4/2013	Beta	2.69E-02	2.25E-03	1.45E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185545	2/11/2013 - 2/11/2013	Beta	2.21E-02	2.04E-03	1.42E-03
185561	2/18/2013 - 2/18/2013	Beta	1.78E-02	1.89E-03	1.42E-03
185578	2/25/2013 - 2/25/2013	Beta	1.87E-02	1.97E-03	1.46E-03
185595	3/4/2013 - 3/4/2013	Beta	1.69E-02	1.84E-03	1.38E-03
185612	3/11/2013 - 3/11/2013	Beta	1.60E-02	1.89E-03	1.53E-03
185629	3/18/2013 - 3/18/2013	Beta	2.25E-02	2.00E-03	1.34E-03
185646	3/24/2013 - 3/24/2013	Beta	1.93E-02	2.07E-03	1.63E-03
185663	4/1/2013 - 4/1/2013	Beta	1.56E-02	1.60E-03	1.24E-03
256283	4/1/2013 - 4/8/2013	Beta	2.24E-02	1.46E-03	2.91E-03
256346	4/8/2013 - 4/15/2013	Beta	1.38E-02	1.16E-03	2.63E-03
257136	4/22/2013 - 4/29/2013	Beta	1.30E-02	1.16E-03	2.75E-03
257243	4/15/2013 - 4/22/2013	Beta	1.32E-02	1.26E-03	2.95E-03
257289	4/29/2013 - 5/6/2013	Beta	8.65E-03	1.07E-03	2.78E-03
257736	5/6/2013 - 5/13/2013	Beta	1.58E-02	1.32E-03	2.90E-03
257980	5/13/2013 - 5/20/2013	Beta	2.31E-02	1.35E-03	2.48E-03
258215	5/20/2013 - 5/26/2013	Beta	1.53E-02	1.45E-03	3.38E-03
258562	5/26/2013 - 6/3/2013	Beta	1.39E-02	1.20E-03	2.75E-03
259032	6/3/2013 - 6/10/2013	Beta	1.05E-02	1.08E-03	2.61E-03
259580	6/10/2013 - 6/18/2013	Beta	1.33E-02	1.05E-03	2.27E-03
260214	6/18/2013 - 6/24/2013	Beta	1.08E-02	1.27E-03	3.25E-03
260674	7/1/2013 - 7/8/2013	Beta	7.26E-03	9.73E-04	2.52E-03
261637	7/8/2013 - 7/15/2013	Beta	7.60E-03	9.81E-04	2.54E-03
261962	6/24/2013 - 7/1/2013	Beta	1.45E-02	1.12E-03	2.26E-03
262139	7/15/2013 - 7/22/2013	Beta	6.44E-03	9.87E-04	2.69E-03
262736	4/1/2013 - 7/1/2013	I-131	<2.67E-02	0.00E+00	2.67E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
262736	4/1/2013 - 7/1/2013	Cs-134	<2.89E-04	0.00E+00	2.89E-04
		Cs-137	<3.54E-04	0.00E+00	3.54E-04
		Be-7	1.31E-01	5.14E-03	4.83E-03
		K-40	1.36E-02	2.27E-03	4.17E-03
263212	7/22/2013 - 7/29/2013	Beta	1.34E-02	1.16E-03	2.60E-03
263427	7/29/2013 - 8/5/2013	Beta	1.71E-02	1.30E-03	2.85E-03
264082	8/5/2013 - 8/12/2013	Beta	1.20E-02	1.18E-03	2.88E-03
265216	8/12/2013 - 8/20/2013	Beta	1.10E-02	9.54E-04	2.06E-03
265536	8/20/2013 - 8/26/2013	Beta	1.31E-02	1.26E-03	2.91E-03
267211	8/26/2013 - 9/3/2013	Beta	2.35E-02	1.31E-03	2.46E-03
267681	9/3/2013 - 9/9/2013	Beta	2.55E-02	1.59E-03	3.11E-03
268521	9/9/2013 - 9/16/2013	Beta	2.61E-02	1.44E-03	2.64E-03
269691	9/16/2013 - 9/23/2013	Beta	2.07E-02	1.36E-03	2.70E-03
270786	9/23/2013 - 9/30/2013	Beta	1.62E-02	1.23E-03	2.66E-03
271508	9/30/2013 - 10/7/2013	Beta	2.27E-02	1.36E-03	2.49E-03
272118	10/7/2013 - 10/14/2013	Beta	9.12E-03	1.01E-03	2.45E-03
272513	10/14/2013 - 10/21/2013	Beta	1.61E-02	1.23E-03	2.56E-03
272664	7/1/2013 - 9/30/2013	I-131	<6.56E-02	0.00E+00	6.56E-02
		Cs-134	<5.42E-04	0.00E+00	5.42E-04
		Cs-137	<5.89E-04	0.00E+00	5.89E-04
		Be-7	1.25E-01	6.47E-03	8.94E-03
		K-40	1.74E-02	3.36E-03	6.12E-03
272901	10/21/2013 - 10/28/2013	Beta	2.39E-02	1.43E-03	2.79E-03
273989	10/28/2013 - 11/4/2013	Beta	2.80E-02	1.52E-03	2.79E-03
274439	11/4/2013 - 11/11/2013	Beta	1.41E-02	1.22E-03	2.79E-03
274964	11/11/2013 - 11/18/2013	Beta	1.58E-02	1.23E-03	2.58E-03
276507	11/18/2013 - 11/25/2013	Beta	1.39E-02	1.20E-03	2.69E-03
278772	11/25/2013 - 12/2/2013	Beta	1.59E-02	1.22E-03	2.57E-03
278843	12/2/2013 - 12/9/2013	Beta	1.57E-02	1.27E-03	2.79E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

## Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279083	12/9/2013 - 12/16/2013	Beta	2.07E-02	1.34E-03	2.61E-03
279711	12/16/2013 - 12/23/2013	Beta	1.42E-02	1.21E-03	2.68E-03
280200	12/23/2013 - 12/30/2013	Beta	1.49E-02	1.25E-03	2.77E-03
280617	9/30/2013 - 12/30/2013	Cs-134	<2.32E-04	0.00E+00	2.32E-04
		Cs-137	<3.41E-04	0.00E+00	3.41E-04
		Be-7	8.51E-02	4.63E-03	4.08E-03
		K-40	7.29E-03	2.09E-03	3.94E-03

## Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178082	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	1.16E-01	2.75E-02	
		K-40	4.46E-02	2.06E-02	
185461	1/7/2013 - 1/7/2013	Beta	2.65E-02	2.19E-03	1.36E-03
185478	1/14/2013 - 1/14/2013	Beta	2.42E-02	2.07E-03	1.25E-03
185495	1/21/2013 - 1/21/2013	Beta	2.06E-02	2.01E-03	1.47E-03
185512	1/28/2013 - 1/28/2013	Beta	2.73E-02	2.25E-03	1.50E-03
185529	2/4/2013 - 2/4/2013	Beta	2.46E-02	2.55E-03	1.92E-03
185562	2/18/2013 - 2/18/2013	Beta	2.13E-02	2.08E-03	1.47E-03
185579	2/25/2013 - 2/25/2013	Beta	1.72E-02	1.93E-03	1.49E-03
185596	3/4/2013 - 3/4/2013	Beta	1.72E-02	1.88E-03	1.42E-03
185613	3/11/2013 - 3/11/2013	Beta	1.61E-02	1.87E-03	1.50E-03
185630	3/18/2013 - 3/18/2013	Beta	2.35E-02	2.16E-03	1.49E-03
185647	3/24/2013 - 3/24/2013	Beta	1.83E-02	2.18E-03	1.83E-03
185664	4/1/2013 - 4/1/2013	Beta	1.75E-02	1.82E-03	1.41E-03
256284	4/1/2013 - 4/8/2013	Beta	1.77E-02	1.32E-03	2.81E-03
256347	4/8/2013 - 4/15/2013	Beta	1.15E-02	1.16E-03	2.79E-03
257137	4/22/2013 - 4/29/2013	Beta	1.28E-02	1.23E-03	3.02E-03
257245	4/15/2013 - 4/22/2013	Beta	1.47E-02	1.25E-03	2.78E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257290	4/29/2013 - 5/6/2013	Beta	8.52E-03	1.11E-03	2.96E-03
257737	5/6/2013 - 5/13/2013	Beta	1.44E-02	1.22E-03	2.70E-03
257981	5/13/2013 - 5/20/2013	Beta	2.47E-02	1.46E-03	2.71E-03
258216	5/20/2013 - 5/26/2013	Beta	1.16E-02	1.29E-03	3.18E-03
258563	5/26/2013 - 6/3/2013	Beta	1.24E-02	1.09E-03	2.51E-03
259033	6/3/2013 - 6/10/2013	Beta	1.03E-02	1.13E-03	2.78E-03
259581	6/10/2013 - 6/18/2013	Beta	1.43E-02	1.12E-03	2.40E-03
260215	6/18/2013 - 6/24/2013	Beta	9.87E-03	1.27E-03	3.33E-03
260675	7/1/2013 - 7/8/2013	Beta	7.72E-03	1.01E-03	2.62E-03
261638	7/8/2013 - 7/15/2013	Beta	8.53E-03	1.10E-03	2.85E-03
261965	6/24/2013 - 7/1/2013	Beta	1.27E-02	1.12E-03	2.43E-03
262140	7/15/2013 - 7/22/2013	Beta	7.67E-03	1.02E-03	2.69E-03
262737	4/1/2013 - 7/1/2013	I-131	<6.88E-02	0.00E+00	6.88E-02
		Cs-134	<3.85E-04	0.00E+00	3.85E-04
		Cs-137	<4.06E-04	0.00E+00	4.06E-04
		Be-7	1.29E-01	4.64E-03	6.28E-03
		K-40	2.62E-02	2.20E-03	4.85E-03
263213	7/22/2013 - 7/29/2013	Beta	1.53E-02	1.25E-03	2.74E-03
263428	7/29/2013 - 8/5/2013	Beta	1.88E-02	1.34E-03	2.86E-03
264083	8/5/2013 - 8/12/2013	Beta	1.35E-02	1.17E-03	2.53E-03
265217	8/12/2013 - 8/20/2013	Beta	1.14E-02	9.96E-04	2.15E-03
265537	8/20/2013 - 8/26/2013	Beta	1.16E-02	1.26E-03	3.06E-03
267212	8/26/2013 - 9/3/2013	Beta	2.29E-02	1.33E-03	2.56E-03
267682	9/3/2013 - 9/9/2013	Beta	2.73E-02	1.71E-03	3.36E-03
268522	9/9/2013 - 9/16/2013	Beta	2.85E-02	1.54E-03	2.79E-03
269692	9/16/2013 - 9/23/2013	Beta	2.29E-02	1.45E-03	2.81E-03
270787	9/23/2013 - 9/30/2013	Beta	1.68E-02	1.29E-03	2.80E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

## Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271509	9/30/2013 - 10/7/2013	Beta	2.37E-02	1.48E-03	2.79E-03
272119	10/7/2013 - 10/14/2013	Beta	9.62E-03	1.02E-03	2.41E-03
272514	10/14/2013 - 10/21/2013	Beta	1.90E-02	1.34E-03	2.69E-03
272665	7/1/2013 - 9/30/2013	I-131	<6.98E-02	0.00E+00	6.98E-02
		Cs-134	<5.62E-04	0.00E+00	5.62E-04
		Cs-137	<5.77E-04	0.00E+00	5.77E-04
		Be-7	1.15E-01	7.12E-03	8.80E-03
		K-40	2.82E-02	4.18E-03	7.51E-03
272902	10/21/2013 - 10/28/2013	Beta	2.29E-02	1.46E-03	2.95E-03
273990	10/28/2013 - 11/4/2013	Beta	2.75E-02	1.56E-03	2.92E-03
274440	11/4/2013 - 11/11/2013	Beta	1.38E-02	1.25E-03	2.92E-03
274965	11/11/2013 - 11/18/2013	Beta	1.81E-02	1.32E-03	2.67E-03
276508	11/18/2013 - 11/25/2013	Beta	1.84E-02	1.35E-03	2.81E-03
278773	11/25/2013 - 12/2/2013	Beta	1.78E-02	1.31E-03	2.72E-03
278844	12/2/2013 - 12/9/2013	Beta	1.66E-02	1.32E-03	2.89E-03
279084	12/9/2013 - 12/16/2013	Beta	2.02E-02	1.36E-03	2.70E-03
279712	12/16/2013 - 12/23/2013	Beta	1.60E-02	1.27E-03	2.74E-03
280201	12/23/2013 - 12/30/2013	Beta	1.99E-02	1.42E-03	2.94E-03
280620	9/30/2013 - 12/30/2013	Cs-134	<2.93E-04	0.00E+00	2.93E-04
		Cs-137	<2.43E-04	0.00E+00	2.43E-04
		Be-7	8.72E-02	4.76E-03	5.23E-03
		K-40	8.41E-03	1.88E-03	3.38E-03

## Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178083	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	9.56E-02	2.22E-02	
		K-40	6.67E-02	1.99E-02	
		Pb-212	1.42E-03	1.20E-03	
185462	1/7/2013 - 1/7/2013	Beta	2.86E-02	2.27E-03	1.36E-03
185479	1/14/2013 - 1/14/2013	Beta	2.60E-02	2.12E-03	1.23E-03
185496	1/21/2013 - 1/21/2013	Beta	1.82E-02	1.94E-03	1.51E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185513	1/28/2013 - 1/28/2013	Beta	2.79E-02	2.30E-03	1.53E-03
185530	2/4/2013 - 2/4/2013	Beta	2.50E-02	2.18E-03	1.45E-03
185546	2/11/2013 - 2/11/2013	Beta	2.08E-02	1.98E-03	1.41E-03
185563	2/18/2013 - 2/18/2013	Beta	1.91E-02	1.96E-03	1.44E-03
185580	2/25/2013 - 2/25/2013	Beta	1.98E-02	1.99E-03	1.43E-03
185597	3/4/2013 - 3/4/2013	Beta	1.63E-02	1.85E-03	1.43E-03
185614	3/11/2013 - 3/11/2013	Beta	1.57E-02	2.00E-03	1.69E-03
185631	3/18/2013 - 3/18/2013	Beta	2.43E-02	2.19E-03	1.49E-03
185648	3/24/2013 - 3/24/2013	Beta	2.51E-02	2.46E-03	1.83E-03
185665	4/1/2013 - 4/1/2013	Beta	1.69E-02	1.76E-03	1.37E-03
256285	4/1/2013 - 4/8/2013	Beta	1.96E-02	1.37E-03	2.82E-03
256348	4/8/2013 - 4/15/2013	Beta	1.45E-02	1.21E-03	2.72E-03
257138	4/22/2013 - 4/29/2013	Beta	1.31E-02	1.24E-03	3.03E-03
257242	4/15/2013 - 4/22/2013	Beta	1.40E-02	1.26E-03	2.89E-03
257291	4/29/2013 - 5/6/2013	Beta	7.46E-03	1.09E-03	2.96E-03
257738	5/6/2013 - 5/13/2013	Beta	1.47E-02	1.21E-03	2.66E-03
257982	5/13/2013 - 5/20/2013	Beta	2.53E-02	1.48E-03	2.73E-03
258217	5/20/2013 - 5/26/2013	Beta	1.38E-02	1.36E-03	3.23E-03
258564	5/26/2013 - 6/3/2013	Beta	1.32E-02	1.11E-03	2.53E-03
259034	6/3/2013 - 6/10/2013	Beta	8.90E-03	1.08E-03	2.75E-03
259582	6/10/2013 - 6/18/2013	Beta	1.21E-02	1.06E-03	2.39E-03
260216	6/18/2013 - 6/24/2013	Beta	1.01E-02	1.30E-03	3.40E-03
260676	7/1/2013 - 7/8/2013	Beta	6.89E-03	1.00E-03	2.66E-03
261639	7/8/2013 - 7/15/2013	Beta	7.18E-03	1.01E-03	2.69E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
261961	6/24/2013 - 7/1/2013	Beta	1.50E-02	1.18E-03	2.41E-03
262141	7/15/2013 - 7/22/2013	Beta	7.74E-03	1.07E-03	2.85E-03
262738	4/1/2013 - 7/1/2013	I-131	<2.18E-02	0.00E+00	2.18E-02
		Cs-134	<2.34E-04	0.00E+00	2.34E-04
		Cs-137	<2.69E-04	0.00E+00	2.69E-04
		Be-7	1.30E-01	4.79E-03	3.46E-03
		K-40	1.25E-02	1.74E-03	2.28E-03
263214	7/22/2013 - 7/29/2013	Beta	1.40E-02	1.20E-03	2.67E-03
263429	7/29/2013 - 8/5/2013	Beta	1.86E-02	1.38E-03	3.00E-03
264084	8/5/2013 - 8/12/2013	Beta	1.31E-02	1.27E-03	3.06E-03
265218	8/12/2013 - 8/20/2013	Beta	1.05E-02	9.78E-04	2.18E-03
265538	8/20/2013 - 8/26/2013	Beta	1.27E-02	1.30E-03	3.09E-03
267213	8/26/2013 - 9/3/2013	Beta	2.37E-02	1.37E-03	2.62E-03
267683	9/3/2013 - 9/9/2013	Beta	2.67E-02	1.70E-03	3.37E-03
268523	9/9/2013 - 9/16/2013	Beta	2.78E-02	1.52E-03	2.78E-03
269693	9/16/2013 - 9/23/2013	Beta	2.15E-02	1.42E-03	2.84E-03
270788	9/23/2013 - 9/30/2013	Beta	1.63E-02	1.29E-03	2.83E-03
271510	9/30/2013 - 10/7/2013	Beta	2.33E-02	1.42E-03	2.64E-03
272120	10/7/2013 - 10/14/2013	Beta	9.54E-03	1.07E-03	2.59E-03
272515	10/14/2013 - 10/21/2013	Beta	1.75E-02	1.31E-03	2.71E-03
272666	7/1/2013 - 9/30/2013	I-131	<6.95E-02	0.00E+00	6.95E-02
		Cs-134	<5.83E-04	0.00E+00	5.83E-04
		Cs-137	<5.66E-04	0.00E+00	5.66E-04
		Be-7	1.26E-01	7.35E-03	8.89E-03
		K-40	2.77E-02	3.98E-03	6.60E-03
272903	10/21/2013 - 10/28/2013	Beta	2.33E-02	1.49E-03	3.00E-03
273991	10/28/2013 - 11/4/2013	Beta	2.87E-02	1.60E-03	2.96E-03
274441	11/4/2013 - 11/11/2013	Beta	1.55E-02	1.30E-03	2.94E-03
274966	11/11/2013 - 11/18/2013	Beta	1.63E-02	1.30E-03	2.73E-03
276509	11/18/2013 - 11/25/2013	Beta	1.80E-02	1.34E-03	2.82E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
278774	11/25/2013 - 12/2/2013	Beta	1.81E-02	1.35E-03	2.82E-03
278845	12/2/2013 - 12/9/2013	Beta	1.79E-02	1.34E-03	2.87E-03
279085	12/9/2013 - 12/16/2013	Beta	2.19E-02	1.42E-03	2.76E-03
279713	12/16/2013 - 12/23/2013	Beta	1.70E-02	1.34E-03	2.86E-03
280202	12/23/2013 - 12/30/2013	Beta	1.62E-02	1.33E-03	2.93E-03
280616	9/30/2013 - 12/30/2013	Cs-134	<2.46E-04	0.00E+00	2.46E-04
		Cs-137	<2.28E-04	0.00E+00	2.28E-04
		Be-7	8.68E-02	5.08E-03	4.43E-03
		K-40	8.01E-03	2.23E-03	3.92E-03

Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178084	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	1.08E-01	2.20E-02	
		Ra-226	1.07E-02	9.44E-03	
185463	1/7/2013 - 1/7/2013	Beta	2.83E-02	2.26E-03	1.36E-03
185480	1/14/2013 - 1/14/2013	Beta	2.39E-02	2.05E-03	1.25E-03
185497	1/21/2013 - 1/21/2013	Beta	1.97E-02	1.99E-03	1.48E-03
185514	1/28/2013 - 1/28/2013	Beta	2.99E-02	2.35E-03	1.51E-03
185531	2/4/2013 - 2/4/2013	Beta	2.47E-02	2.18E-03	1.46E-03
185547	2/11/2013 - 2/11/2013	Beta	2.15E-02	2.01E-03	1.41E-03
185564	2/18/2013 - 2/18/2013	Beta	1.82E-02	1.90E-03	1.42E-03
185581	2/25/2013 - 2/25/2013	Beta	1.89E-02	1.93E-03	1.40E-03
185598	3/4/2013 - 3/4/2013	Beta	1.67E-02	1.84E-03	1.39E-03
185615	3/11/2013 - 3/11/2013	Beta	1.71E-02	1.86E-03	1.44E-03
185632	3/18/2013 - 3/18/2013	Beta	2.40E-02	2.15E-03	1.45E-03
185649	3/24/2013 - 3/24/2013	Beta	2.25E-02	2.31E-03	1.77E-03
185666	4/1/2013 - 4/1/2013	Beta	1.78E-02	1.78E-03	1.35E-03
256286	4/1/2013 - 4/8/2013	Beta	1.80E-02	1.31E-03	2.76E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256349	4/8/2013 - 4/15/2013	Beta	1.46E-02	1.20E-03	2.67E-03
257139	4/22/2013 - 4/29/2013	Beta	1.26E-02	1.22E-03	2.96E-03
257244	4/15/2013 - 4/22/2013	Beta	1.46E-02	1.26E-03	2.83E-03
257292	4/29/2013 - 5/6/2013	Beta	9.06E-03	1.11E-03	2.91E-03
257739	5/6/2013 - 5/13/2013	Beta	1.44E-02	1.19E-03	2.63E-03
257983	5/13/2013 - 5/20/2013	Beta	2.78E-02	1.53E-03	2.71E-03
258218	5/20/2013 - 5/26/2013	Beta	1.25E-02	1.31E-03	3.16E-03
258565	5/26/2013 - 6/3/2013	Beta	1.21E-02	1.05E-03	2.42E-03
259035	6/3/2013 - 6/10/2013	Beta	8.87E-03	1.08E-03	2.73E-03
259583	6/10/2013 - 6/18/2013	Beta	1.47E-02	1.10E-03	2.34E-03
260217	6/18/2013 - 6/24/2013	Beta	1.06E-02	1.29E-03	3.35E-03
260677	7/1/2013 - 7/8/2013	Beta	5.84E-03	9.44E-04	2.57E-03
261640	7/8/2013 - 7/15/2013	Beta	7.66E-03	1.01E-03	2.63E-03
261963	6/24/2013 - 7/1/2013	Beta	1.27E-02	1.09E-03	2.33E-03
262142	7/15/2013 - 7/22/2013	Beta	8.77E-03	1.08E-03	2.77E-03
262739	4/1/2013 - 7/1/2013	I-131	<2.89E-02	0.00E+00	2.89E-02
		Cs-134	<2.79E-04	0.00E+00	2.79E-04
		Cs-137	<4.26E-04	0.00E+00	4.26E-04
		Be-7	1.34E-01	6.28E-03	5.66E-03
		K-40	1.48E-02	2.83E-03	3.72E-03
263215	7/22/2013 - 7/29/2013	Beta	1.60E-02	1.21E-03	2.57E-03
263430	7/29/2013 - 8/5/2013	Beta	1.89E-02	1.37E-03	2.94E-03
264085	8/5/2013 - 8/12/2013	Beta	1.58E-02	1.31E-03	3.02E-03
265219	8/12/2013 - 8/20/2013	Beta	1.13E-02	9.81E-04	2.12E-03
265539	8/20/2013 - 8/26/2013	Beta	1.37E-02	1.31E-03	3.00E-03
267214	8/26/2013 - 9/3/2013	Beta	2.59E-02	1.38E-03	2.54E-03
267684	9/3/2013 - 9/9/2013	Beta	2.74E-02	1.67E-03	3.23E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
268524	9/9/2013 - 9/16/2013	Beta	2.90E-02	1.53E-03	2.74E-03
269694	9/16/2013 - 9/23/2013	Beta	2.05E-02	1.38E-03	2.77E-03
270789	9/23/2013 - 9/30/2013	Beta	1.47E-02	1.24E-03	2.78E-03
271511	9/30/2013 - 10/7/2013	Beta	2.71E-02	1.48E-03	2.58E-03
272121	10/7/2013 - 10/14/2013	Beta	9.98E-03	1.06E-03	2.52E-03
272516	10/14/2013 - 10/21/2013	Beta	1.86E-02	1.31E-03	2.63E-03
272667	7/1/2013 - 9/30/2013	I-131	<6.58E-02	0.00E+00	6.58E-02
		Cs-134	<5.71E-04	0.00E+00	5.71E-04
		Cs-137	<6.33E-04	0.00E+00	6.33E-04
		Be-7	1.20E-01	7.73E-03	1.00E-02
		K-40	2.01E-02	3.87E-03	5.80E-03
272904	10/21/2013 - 10/28/2013	Beta	2.40E-02	1.47E-03	2.91E-03
273992	10/28/2013 - 11/4/2013	Beta	2.94E-02	1.58E-03	2.87E-03
274442	11/4/2013 - 11/11/2013	Beta	1.59E-02	1.28E-03	2.86E-03
274967	11/11/2013 - 11/18/2013	Beta	1.60E-02	1.26E-03	2.65E-03
276510	11/18/2013 - 11/25/2013	Beta	1.78E-02	1.32E-03	2.75E-03
278775	11/25/2013 - 12/2/2013	Beta	2.09E-02	1.36E-03	2.65E-03
278846	12/2/2013 - 12/9/2013	Beta	1.48E-02	1.26E-03	2.86E-03
279086	12/9/2013 - 12/16/2013	Beta	2.10E-02	1.37E-03	2.67E-03
279714	12/16/2013 - 12/23/2013	Beta	1.61E-02	1.29E-03	2.76E-03
280203	12/23/2013 - 12/30/2013	Beta	1.61E-02	1.30E-03	2.84E-03
280618	9/30/2013 - 12/30/2013	Cs-134	<2.59E-04	0.00E+00	2.59E-04
		Cs-137	<2.01E-04	0.00E+00	2.01E-04
		Be-7	1.02E-01	4.23E-03	4.43E-03
		K-40	2.18E-02	2.25E-03	2.88E-03

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178085	2/18/2013 - 2/18/2013	I-131	<7.00E-02	0.00E+00	7.00E-02
		Cs-134	<5.00E-02	0.00E+00	5.00E-02
		Cs-137	<6.00E-02	0.00E+00	6.00E-02
		Be-7	9.13E-02	2.16E-02	
		K-40	3.05E-02	1.32E-02	
185464	1/7/2013 - 1/7/2013	Beta	2.54E-02	2.13E-03	1.33E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
185481	1/14/2013 - 1/14/2013	Beta	2.43E-02	2.04E-03	1.22E-03
185498	1/21/2013 - 1/21/2013	Beta	1.91E-02	1.93E-03	1.45E-03
185515	1/28/2013 - 1/28/2013	Beta	2.84E-02	2.27E-03	1.48E-03
185532	2/4/2013 - 2/4/2013	Beta	2.34E-02	2.09E-03	1.41E-03
185548	2/11/2013 - 2/11/2013	Beta	1.71E-02	1.81E-03	1.38E-03
185565	2/18/2013 - 2/18/2013	Beta	1.76E-02	1.83E-03	1.36E-03
185582	2/25/2013 - 2/25/2013	Beta	1.85E-02	1.87E-03	1.35E-03
185599	3/4/2013 - 3/4/2013	Beta	1.80E-02	2.00E-03	1.53E-03
185616	3/11/2013 - 3/11/2013	Beta	1.54E-02	1.79E-03	1.44E-03
185633	3/18/2013 - 3/18/2013	Beta	2.71E-02	2.35E-03	1.56E-03
185650	3/24/2013 - 3/24/2013	Beta	2.41E-02	2.47E-03	1.90E-03
185667	4/1/2013 - 4/1/2013	Beta	1.69E-02	1.82E-03	1.44E-03
256287	4/1/2013 - 4/8/2013	Beta	1.86E-02	1.39E-03	2.97E-03
256350	4/8/2013 - 4/15/2013	Beta	1.39E-02	1.24E-03	2.86E-03
257140	4/22/2013 - 4/29/2013	Beta	1.64E-02	1.37E-03	3.18E-03
257246	4/15/2013 - 4/22/2013	Beta	1.79E-02	1.41E-03	3.06E-03
257293	4/29/2013 - 5/6/2013	Beta	1.04E-02	1.25E-03	3.24E-03
257740	5/6/2013 - 5/13/2013	Beta	1.33E-02	1.26E-03	2.93E-03
257984	5/13/2013 - 5/20/2013	Beta	2.79E-02	1.61E-03	2.95E-03
258219	5/20/2013 - 5/26/2013	Beta	1.49E-02	1.49E-03	3.52E-03
258566	5/26/2013 - 6/3/2013	Beta	1.40E-02	1.20E-03	2.75E-03
259036	6/3/2013 - 6/10/2013	Beta	1.06E-02	1.21E-03	3.00E-03
259584	6/10/2013 - 6/18/2013	Beta	1.63E-02	1.23E-03	2.60E-03
260218	6/18/2013 - 6/24/2013	Beta	1.42E-02	1.50E-03	3.73E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
260678	7/1/2013 - 7/8/2013	Beta	7.49E-03	1.10E-03	2.92E-03
261641	7/8/2013 - 7/15/2013	Beta	9.64E-03	1.15E-03	2.91E-03
261964	6/24/2013 - 7/1/2013	Beta	1.60E-02	1.27E-03	2.60E-03
262143	7/15/2013 - 7/22/2013	Beta	9.30E-03	1.19E-03	3.09E-03
262740	4/1/2013 - 7/1/2013	I-131	<3.18E-02	0.00E+00	3.18E-02
		Cs-134	<2.83E-04	0.00E+00	2.83E-04
		Cs-137	<3.58E-04	0.00E+00	3.58E-04
		Be-7	1.40E-01	5.59E-03	4.77E-03
		K-40	1.64E-02	2.55E-03	3.92E-03
263216	7/22/2013 - 7/29/2013	Beta	1.77E-02	1.36E-03	2.87E-03
263431	7/29/2013 - 8/5/2013	Beta	2.06E-02	1.51E-03	3.27E-03
264086	8/5/2013 - 8/12/2013	Beta	1.62E-02	1.42E-03	3.31E-03
265220	8/12/2013 - 8/20/2013	Beta	1.30E-02	1.11E-03	2.38E-03
265540	8/20/2013 - 8/26/2013	Beta	1.26E-02	1.38E-03	3.35E-03
267215	8/26/2013 - 9/3/2013	Beta	2.77E-02	1.52E-03	2.84E-03
267685	9/3/2013 - 9/9/2013	Beta	2.68E-02	1.77E-03	3.57E-03
268525	9/9/2013 - 9/16/2013	Beta	3.14E-02	1.69E-03	3.05E-03
269695	9/16/2013 - 9/23/2013	Beta	2.09E-02	1.43E-03	2.88E-03
270804	9/23/2013 - 9/30/2013	Beta	2.02E-02	1.43E-03	2.97E-03
271512	9/30/2013 - 10/7/2013	Beta	2.90E-02	1.64E-03	2.90E-03
272122	10/7/2013 - 10/14/2013	Beta	1.07E-02	1.18E-03	2.82E-03
272517	10/14/2013 - 10/21/2013	Beta	1.92E-02	1.43E-03	2.95E-03
272668	7/1/2013 - 9/30/2013	I-131	<6.25E-02	0.00E+00	6.25E-02
		Cs-134	<4.83E-04	0.00E+00	4.83E-04
		Cs-137	<4.77E-04	0.00E+00	4.77E-04
		Be-7	1.31E-01	6.34E-03	7.88E-03
		K-40	2.39E-02	3.35E-03	6.55E-03
272905	10/21/2013 - 10/28/2013	Beta	2.63E-02	1.62E-03	3.19E-03
273993	10/28/2013 - 11/4/2013	Beta	3.03E-02	1.71E-03	3.19E-03
274443	11/4/2013 - 11/11/2013	Beta	1.88E-02	1.46E-03	3.18E-03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR PARTICULATE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
274968	11/11/2013 - 11/18/2013	Beta	2.08E-02	1.48E-03	2.94E-03
276511	11/18/2013 - 11/25/2013	Beta	1.86E-02	1.44E-03	3.07E-03
278776	11/25/2013 - 12/2/2013	Beta	2.19E-02	1.48E-03	2.95E-03
278847	12/2/2013 - 12/9/2013	Beta	2.04E-02	1.51E-03	3.20E-03
279087	12/9/2013 - 12/16/2013	Beta	2.17E-02	1.48E-03	2.96E-03
279715	12/16/2013 - 12/23/2013	Beta	1.74E-02	1.41E-03	3.06E-03
280204	12/23/2013 - 12/30/2013	Beta	2.00E-02	1.48E-03	3.14E-03
280619	9/30/2013 - 12/30/2013	Cs-134	<2.93E-04	0.00E+00	2.93E-04
		Cs-137	<3.26E-04	0.00E+00	3.26E-04
		Be-7	1.07E-01	6.27E-03	5.69E-03
		K-40	5.85E-03	1.65E-03	3.99E-03

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177511	1/7/2013 - 1/7/2013	I-131	<1.64E-02	0.00E+00	1.64E-02
177574	1/14/2013 - 1/14/2013	I-131	<1.88E-02	0.00E+00	1.88E-02
177619	1/21/2013 - 1/21/2013	I-131	<1.55E-02	0.00E+00	1.55E-02
177653	1/28/2013 - 1/28/2013	I-131	<1.54E-02	0.00E+00	1.54E-02
177687	2/4/2013 - 2/4/2013	I-131	<1.33E-02	0.00E+00	1.33E-02
177732	2/11/2013 - 2/11/2013	I-131	<1.63E-02	0.00E+00	1.63E-02
177770	2/18/2013 - 2/18/2013	I-131	<1.29E-02	0.00E+00	1.29E-02
177841	2/25/2013 - 2/25/2013	I-131	<1.71E-02	0.00E+00	1.71E-02
177877	3/4/2013 - 3/4/2013	I-131	<1.08E-02	0.00E+00	1.08E-02
177926	3/11/2013 - 3/11/2013	I-131	<2.41E-02	0.00E+00	2.41E-02
177962	3/18/2013 - 3/18/2013	I-131	<1.88E-02	0.00E+00	1.88E-02
177989	3/24/2013 - 3/24/2013	I-131	<2.12E-02	0.00E+00	2.12E-02
178023	4/1/2013 - 4/1/2013	I-131	<1.20E-02	0.00E+00	1.20E-02
178093	4/8/2013 - 4/8/2013	I-131	<1.72E-02	0.00E+00	1.72E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256298	4/8/2013 - 4/15/2013	I-131	<2.12E-02	0.00E+00	2.12E-02
		Cs-134	<1.30E-02	0.00E+00	1.30E-02
		Cs-137	<8.66E-03	0.00E+00	8.66E-03
		Be-7	<9.70E-02	0.00E+00	9.70E-02
		K-40	<4.46E-01	0.00E+00	4.46E-01
256646	4/15/2013 - 4/22/2013	I-131	<2.63E-02	0.00E+00	2.63E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<1.29E-02	0.00E+00	1.29E-02
		Be-7	5.69E-02	2.15E-02	1.06E-01
		K-40	4.67E-01	1.02E-01	1.62E-01
257180	4/22/2013 - 4/29/2013	I-131	<2.24E-02	0.00E+00	2.24E-02
		Cs-134	<1.37E-02	0.00E+00	1.37E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<1.15E-01	0.00E+00	1.15E-01
		K-40	4.00E-01	1.25E-01	5.93E-02
257325	4/29/2013 - 5/6/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<9.60E-03	0.00E+00	9.60E-03
		Cs-137	<1.27E-02	0.00E+00	1.27E-02
		Be-7	<9.46E-02	0.00E+00	9.46E-02
		K-40	7.63E-01	1.02E-01	1.24E-01
257770	5/6/2013 - 5/13/2013	I-131	<1.97E-02	0.00E+00	1.97E-02
		Cs-134	<1.09E-02	0.00E+00	1.09E-02
		Cs-137	<1.48E-02	0.00E+00	1.48E-02
		Be-7	<6.97E-02	0.00E+00	6.97E-02
		K-40	<4.71E-01	0.00E+00	4.71E-01
258016	5/13/2013 - 5/20/2013	I-131	<1.28E-02	0.00E+00	1.28E-02
		Cs-134	<1.18E-02	0.00E+00	1.18E-02
		Cs-137	<1.47E-02	0.00E+00	1.47E-02
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	4.84E-01	9.87E-02	1.44E-01
258262	5/20/2013 - 5/26/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<1.98E-02	0.00E+00	1.98E-02
		Cs-137	<2.45E-02	0.00E+00	2.45E-02
		Be-7	<1.65E-01	0.00E+00	1.65E-01
		K-40	<5.91E-01	0.00E+00	5.91E-01
258598	5/26/2013 - 6/3/2013	I-131	<1.85E-02	0.00E+00	1.85E-02
		Cs-134	<1.31E-02	0.00E+00	1.31E-02
		Cs-137	<1.51E-02	0.00E+00	1.51E-02
		Be-7	<1.43E-01	0.00E+00	1.43E-01
		K-40	3.89E-01	9.43E-02	1.72E-01
259072	6/3/2013 - 6/10/2013	I-131	<1.55E-02	0.00E+00	1.55E-02
		Cs-134	<1.28E-02	0.00E+00	1.28E-02
		Cs-137	<1.08E-02	0.00E+00	1.08E-02
		Be-7	<9.72E-02	0.00E+00	9.72E-02
		K-40	3.39E-01	8.76E-02	1.63E-01
259636	6/10/2013 - 6/18/2013	I-131	<2.23E-02	0.00E+00	2.23E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<9.50E-02	0.00E+00	9.50E-02
		K-40	4.30E-01	1.21E-01	1.66E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
260268	6/18/2013 - 6/24/2013	I-131	<2.10E-02	0.00E+00	2.10E-02
		Cs-134	<1.98E-02	0.00E+00	1.98E-02
		Cs-137	<2.63E-02	0.00E+00	2.63E-02
		Be-7	<2.04E-01	0.00E+00	2.04E-01
		K-40	1.96E-01	1.21E-01	2.17E-01
260740	7/1/2013 - 7/8/2013	I-131	<1.14E-02	0.00E+00	1.14E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.07E-02	0.00E+00	1.07E-02
		Be-7	<7.96E-02	0.00E+00	7.96E-02
		K-40	4.18E-01	7.18E-02	8.99E-02
261679	7/8/2013 - 7/15/2013	I-131	<9.24E-03	0.00E+00	9.24E-03
		Cs-134	<8.24E-03	0.00E+00	8.24E-03
		Cs-137	<1.13E-02	0.00E+00	1.13E-02
		Be-7	<8.11E-02	0.00E+00	8.11E-02
		K-40	3.85E-01	8.61E-02	1.41E-01
261946	6/24/2013 - 7/1/2013	I-131	<1.55E-02	0.00E+00	1.55E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.38E-02	0.00E+00	1.38E-02
		Be-7	<1.55E-01	0.00E+00	1.55E-01
		K-40	<5.34E-01	0.00E+00	5.34E-01
262189	7/15/2013 - 7/22/2013	I-131	<2.31E-02	0.00E+00	2.31E-02
		Cs-134	<1.99E-02	0.00E+00	1.99E-02
		Cs-137	<2.12E-02	0.00E+00	2.12E-02
		Be-7	<1.39E-01	0.00E+00	1.39E-01
		K-40	<5.62E-01	0.00E+00	5.62E-01
263645	7/29/2013 - 8/5/2013	I-131	<2.22E-02	0.00E+00	2.22E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<1.27E-01	0.00E+00	1.27E-01
		K-40	4.88E-01	1.12E-01	1.94E-01
265035	7/22/2013 - 7/29/2013	I-131	<8.78E-03	0.00E+00	8.78E-03
		Cs-134	<3.33E-03	0.00E+00	3.33E-03
		Cs-137	<3.95E-03	0.00E+00	3.95E-03
		Be-7	<3.33E-02	0.00E+00	3.33E-02
		K-40	5.26E-01	4.27E-02	3.69E-02
266652	8/5/2013 - 8/12/2013	I-131	<2.45E-02	0.00E+00	2.45E-02
		Cs-134	<1.46E-02	0.00E+00	1.46E-02
		Cs-137	<2.08E-02	0.00E+00	2.08E-02
		Be-7	<1.36E-01	0.00E+00	1.36E-01
		K-40	4.86E-01	1.14E-01	7.29E-02
267532	8/12/2013 - 8/20/2013	I-131	<1.05E-02	0.00E+00	1.05E-02
		Cs-134	<1.62E-02	0.00E+00	1.62E-02
		Cs-137	<1.29E-02	0.00E+00	1.29E-02
		Be-7	<1.09E-01	0.00E+00	1.09E-01
		K-40	2.26E-01	7.16E-02	6.12E-02
268227	8/20/2013 - 8/26/2013	I-131	<2.17E-02	0.00E+00	2.17E-02
		Cs-134	<2.14E-02	0.00E+00	2.14E-02
		Cs-137	<2.07E-02	0.00E+00	2.07E-02
		Be-7	<1.46E-01	0.00E+00	1.46E-01
		K-40	6.41E-01	1.69E-01	2.25E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
269698	8/26/2013 - 9/3/2013	I-131	<3.32E-02	0.00E+00	3.32E-02
		Cs-134	<1.78E-02	0.00E+00	1.78E-02
		Cs-137	<2.32E-02	0.00E+00	2.32E-02
		Be-7	<1.53E-01	0.00E+00	1.53E-01
		K-40	4.47E-01	1.05E-01	2.23E-01
270606	9/3/2013 - 9/9/2013	I-131	<3.70E-02	0.00E+00	3.70E-02
		Cs-134	<2.00E-02	0.00E+00	2.00E-02
		Cs-137	<2.99E-02	0.00E+00	2.99E-02
		Be-7	<1.88E-01	0.00E+00	1.88E-01
		K-40	<6.18E-01	0.00E+00	6.18E-01
271327	9/9/2013 - 9/16/2013	I-131	<2.18E-02	0.00E+00	2.18E-02
		Cs-134	<1.68E-02	0.00E+00	1.68E-02
		Cs-137	<2.01E-02	0.00E+00	2.01E-02
		Be-7	<1.27E-01	0.00E+00	1.27E-01
		K-40	5.45E-01	1.19E-01	2.38E-01
271712	9/16/2013 - 9/23/2013	I-131	<1.91E-02	0.00E+00	1.91E-02
		Cs-134	<1.52E-02	0.00E+00	1.52E-02
		Cs-137	<1.60E-02	0.00E+00	1.60E-02
		Be-7	<1.23E-01	0.00E+00	1.23E-01
		K-40	<5.09E-01	0.00E+00	5.09E-01
272351	9/23/2013 - 9/30/2013	I-131	<2.66E-02	0.00E+00	2.66E-02
		Cs-134	<1.52E-02	0.00E+00	1.52E-02
		Cs-137	<1.88E-02	0.00E+00	1.88E-02
		Be-7	<1.04E-01	0.00E+00	1.04E-01
		K-40	<4.34E-01	0.00E+00	4.34E-01
272769	9/30/2013 - 10/7/2013	I-131	<3.26E-02	0.00E+00	3.26E-02
		Cs-134	<1.90E-02	0.00E+00	1.90E-02
		Cs-137	<1.92E-02	0.00E+00	1.92E-02
		Be-7	<8.85E-02	0.00E+00	8.85E-02
		K-40	2.17E-01	1.07E-01	2.02E-01
273995	10/7/2013 - 10/14/2013	I-131	<3.99E-02	0.00E+00	3.99E-02
		Cs-134	<1.71E-02	0.00E+00	1.71E-02
		Cs-137	<2.16E-02	0.00E+00	2.16E-02
		Be-7	<1.57E-01	0.00E+00	1.57E-01
		K-40	5.86E-01	1.25E-01	2.44E-01
274241	10/14/2013 - 10/21/2013	I-131	<2.72E-02	0.00E+00	2.72E-02
		Cs-134	<1.94E-02	0.00E+00	1.94E-02
		Cs-137	<1.84E-02	0.00E+00	1.84E-02
		Be-7	<9.18E-02	0.00E+00	9.18E-02
		K-40	4.26E-01	1.06E-01	1.91E-01
274613	10/21/2013 - 10/28/2013	I-131	<1.19E-02	0.00E+00	1.19E-02
		Cs-134	<6.26E-03	0.00E+00	6.26E-03
		Cs-137	<8.55E-03	0.00E+00	8.55E-03
		Be-7	<5.19E-02	0.00E+00	5.19E-02
		K-40	3.47E-01	7.97E-02	1.34E-01
275201	10/28/2013 - 11/4/2013	I-131	<2.08E-02	0.00E+00	2.08E-02
		Cs-134	<1.95E-02	0.00E+00	1.95E-02
		Cs-137	<2.23E-02	0.00E+00	2.23E-02
		Be-7	<1.48E-01	0.00E+00	1.48E-01
		K-40	4.55E-01	1.10E-01	2.30E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277035	11/4/2013 - 11/11/2013	I-131	<2.02E-02	0.00E+00	2.02E-02
		Cs-134	<1.38E-02	0.00E+00	1.38E-02
		Cs-137	<2.08E-02	0.00E+00	2.08E-02
		Be-7	<1.48E-01	0.00E+00	1.48E-01
		K-40	4.26E-01	1.06E-01	2.54E-01
277055	11/18/2013 - 11/25/2013	I-131	<1.66E-02	0.00E+00	1.66E-02
		Cs-134	<9.41E-03	0.00E+00	9.41E-03
		Cs-137	<7.38E-03	0.00E+00	7.38E-03
		Be-7	<6.77E-02	0.00E+00	6.77E-02
		K-40	5.27E-01	8.78E-02	1.02E-01
277065	11/11/2013 - 11/18/2013	I-131	<2.11E-02	0.00E+00	2.11E-02
		Cs-134	<1.19E-02	0.00E+00	1.19E-02
		Cs-137	<1.65E-02	0.00E+00	1.65E-02
		Be-7	<1.51E-01	0.00E+00	1.51E-01
		K-40	3.99E-01	1.40E-01	3.74E-01
278777	11/25/2013 - 12/2/2013	I-131	<2.99E-02	0.00E+00	2.99E-02
		Cs-134	<1.69E-02	0.00E+00	1.69E-02
		Cs-137	<1.13E-02	0.00E+00	1.13E-02
		Be-7	<1.11E-01	0.00E+00	1.11E-01
		K-40	<5.43E-01	0.00E+00	5.43E-01
278848	12/2/2013 - 12/9/2013	I-131	<1.36E-02	0.00E+00	1.36E-02
		Cs-134	<1.03E-02	0.00E+00	1.03E-02
		Cs-137	<9.24E-03	0.00E+00	9.24E-03
		Be-7	<5.32E-02	0.00E+00	5.32E-02
		K-40	6.36E-01	9.12E-02	7.99E-02
279088	12/9/2013 - 12/16/2013	I-131	<2.06E-02	0.00E+00	2.06E-02
		Cs-134	<1.63E-02	0.00E+00	1.63E-02
		Cs-137	<1.37E-02	0.00E+00	1.37E-02
		Be-7	<1.40E-01	0.00E+00	1.40E-01
		K-40	5.61E-01	1.22E-01	1.92E-01
279716	12/16/2013 - 12/23/2013	I-131	<3.44E-02	0.00E+00	3.44E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.80E-02	0.00E+00	1.80E-02
		Be-7	<1.17E-01	0.00E+00	1.17E-01
		K-40	<5.94E-01	0.00E+00	5.94E-01
280205	12/23/2013 - 12/30/2013	I-131	<4.48E-02	0.00E+00	4.48E-02
		Cs-134	<1.82E-02	0.00E+00	1.82E-02
		Cs-137	<2.21E-02	0.00E+00	2.21E-02
		Be-7	<1.27E-01	0.00E+00	1.27E-01
		K-40	5.51E-01	1.23E-01	2.60E-01
<b>Sample Point 2 [ INDICATOR - S @ 0.2 miles ]</b>					
177512	1/7/2013 - 1/7/2013	I-131	<1.95E-02	0.00E+00	1.95E-02
177575	1/14/2013 - 1/14/2013	I-131	<1.47E-02	0.00E+00	1.47E-02
177620	1/21/2013 - 1/21/2013	I-131	<3.08E-02	0.00E+00	3.08E-02
177654	1/28/2013 - 1/28/2013	I-131	<1.94E-02	0.00E+00	1.94E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177688	2/4/2013 - 2/4/2013	I-131	<2.14E-02	0.00E+00	2.14E-02
177733	2/11/2013 - 2/11/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
177771	2/18/2013 - 2/18/2013	I-131	<2.40E-02	0.00E+00	2.40E-02
177842	2/25/2013 - 2/25/2013	I-131	<2.19E-02	0.00E+00	2.19E-02
177878	3/4/2013 - 3/4/2013	I-131	<1.90E-02	0.00E+00	1.90E-02
177927	3/11/2013 - 3/11/2013	I-131	<1.69E-02	0.00E+00	1.69E-02
177963	3/18/2013 - 3/18/2013	I-131	<1.16E-02	0.00E+00	1.16E-02
177990	3/24/2013 - 3/24/2013	I-131	<1.89E-02	0.00E+00	1.89E-02
178024	4/1/2013 - 4/1/2013	I-131	<1.74E-02	0.00E+00	1.74E-02
178094	4/8/2013 - 4/8/2013	I-131	<1.80E-02	0.00E+00	1.80E-02
256377	4/8/2013 - 4/15/2013	I-131	<1.49E-02	0.00E+00	1.49E-02
		Cs-134	<9.70E-03	0.00E+00	9.70E-03
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<6.84E-02	0.00E+00	6.84E-02
		K-40	2.54E-01	6.79E-02	4.90E-02
256647	4/15/2013 - 4/22/2013	I-131	<2.19E-02	0.00E+00	2.19E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<1.52E-02	0.00E+00	1.52E-02
		Be-7	<1.03E-01	0.00E+00	1.03E-01
		K-40	<4.25E-01	0.00E+00	4.25E-01
257181	4/22/2013 - 4/29/2013	I-131	<1.76E-02	0.00E+00	1.76E-02
		Cs-134	<1.56E-02	0.00E+00	1.56E-02
		Cs-137	<8.87E-03	0.00E+00	8.87E-03
		Be-7	<9.94E-02	0.00E+00	9.94E-02
		K-40	3.79E-01	9.19E-02	6.03E-02
257326	4/29/2013 - 5/6/2013	I-131	<1.34E-02	0.00E+00	1.34E-02
		Cs-134	<1.35E-02	0.00E+00	1.35E-02
		Cs-137	<9.81E-03	0.00E+00	9.81E-03
		Be-7	<1.08E-01	0.00E+00	1.08E-01
		K-40	<3.86E-01	0.00E+00	3.86E-01
257771	5/6/2013 - 5/13/2013	I-131	<1.10E-02	0.00E+00	1.10E-02
		Cs-134	<8.95E-03	0.00E+00	8.95E-03
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<5.17E-02	0.00E+00	5.17E-02
		K-40	4.69E-01	8.98E-02	1.22E-01
258017	5/13/2013 - 5/20/2013	I-131	<1.44E-02	0.00E+00	1.44E-02
		Cs-134	<8.97E-03	0.00E+00	8.97E-03
		Cs-137	<7.89E-03	0.00E+00	7.89E-03
		Be-7	<8.80E-02	0.00E+00	8.80E-02
		K-40	6.46E-01	9.05E-02	9.09E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258263	5/20/2013 - 5/26/2013	I-131	<3.54E-02	0.00E+00	3.54E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<1.85E-02	0.00E+00	1.85E-02
		Be-7	<1.56E-01	0.00E+00	1.56E-01
		K-40	3.43E-01	1.03E-01	2.24E-01
258599	5/26/2013 - 6/3/2013	I-131	<2.42E-02	0.00E+00	2.42E-02
		Cs-134	<1.39E-02	0.00E+00	1.39E-02
		Cs-137	<1.58E-02	0.00E+00	1.58E-02
		Be-7	<1.56E-01	0.00E+00	1.56E-01
		K-40	2.71E-01	1.04E-01	6.27E-02
259073	6/3/2013 - 6/10/2013	I-131	<1.61E-02	0.00E+00	1.61E-02
		Cs-134	<1.05E-02	0.00E+00	1.05E-02
		Cs-137	<8.38E-03	0.00E+00	8.38E-03
		Be-7	<8.26E-02	0.00E+00	8.26E-02
		K-40	4.66E-01	7.36E-02	3.15E-02
259637	6/10/2013 - 6/18/2013	I-131	<2.16E-02	0.00E+00	2.16E-02
		Cs-134	<1.71E-02	0.00E+00	1.71E-02
		Cs-137	<1.69E-02	0.00E+00	1.69E-02
		Be-7	<1.17E-01	0.00E+00	1.17E-01
		K-40	<4.86E-01	0.00E+00	4.86E-01
260269	6/18/2013 - 6/24/2013	I-131	<2.73E-02	0.00E+00	2.73E-02
		Cs-134	<1.37E-02	0.00E+00	1.37E-02
		Cs-137	<1.86E-02	0.00E+00	1.86E-02
		Be-7	<1.12E-01	0.00E+00	1.12E-01
		K-40	3.53E-01	1.25E-01	1.90E-01
260741	7/1/2013 - 7/8/2013	I-131	<9.21E-03	0.00E+00	9.21E-03
		Cs-134	<7.46E-03	0.00E+00	7.46E-03
		Cs-137	<5.11E-03	0.00E+00	5.11E-03
		Be-7	<6.48E-02	0.00E+00	6.48E-02
		K-40	2.60E-01	5.82E-02	9.53E-02
261680	7/8/2013 - 7/15/2013	I-131	<8.88E-03	0.00E+00	8.88E-03
		Cs-134	<6.88E-03	0.00E+00	6.88E-03
		Cs-137	<1.13E-02	0.00E+00	1.13E-02
		Be-7	<6.24E-02	0.00E+00	6.24E-02
		K-40	3.84E-01	8.04E-02	9.25E-02
261947	6/24/2013 - 7/1/2013	I-131	<1.47E-02	0.00E+00	1.47E-02
		Cs-134	<8.76E-03	0.00E+00	8.76E-03
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<7.98E-02	0.00E+00	7.98E-02
		K-40	5.27E-01	8.13E-02	8.93E-02
262190	7/15/2013 - 7/22/2013	I-131	<2.08E-02	0.00E+00	2.08E-02
		Cs-134	<1.62E-02	0.00E+00	1.62E-02
		Cs-137	<1.80E-02	0.00E+00	1.80E-02
		Be-7	<1.31E-01	0.00E+00	1.31E-01
		K-40	<5.24E-01	0.00E+00	5.24E-01
263646	7/29/2013 - 8/5/2013	I-131	<2.10E-02	0.00E+00	2.10E-02
		Cs-134	<1.10E-02	0.00E+00	1.10E-02
		Cs-137	<1.82E-02	0.00E+00	1.82E-02
		Be-7	<1.36E-01	0.00E+00	1.36E-01
		K-40	4.96E-01	1.17E-01	2.07E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
265036	7/22/2013 - 7/29/2013	I-131	<3.05E-02	0.00E+00	3.05E-02
		Cs-134	<1.44E-02	0.00E+00	1.44E-02
		Cs-137	<1.34E-02	0.00E+00	1.34E-02
		Be-7	<1.46E-01	0.00E+00	1.46E-01
		K-40	6.30E-01	1.29E-01	2.37E-01
266653	8/5/2013 - 8/12/2013	I-131	<2.53E-02	0.00E+00	2.53E-02
		Cs-134	<1.30E-02	0.00E+00	1.30E-02
		Cs-137	<1.78E-02	0.00E+00	1.78E-02
		Be-7	<1.47E-01	0.00E+00	1.47E-01
		K-40	4.35E-01	1.09E-01	7.36E-02
267533	8/12/2013 - 8/20/2013	I-131	<1.12E-02	0.00E+00	1.12E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.36E-02	0.00E+00	1.36E-02
		Be-7	<7.58E-02	0.00E+00	7.58E-02
		K-40	<3.51E-01	0.00E+00	3.51E-01
268228	8/20/2013 - 8/26/2013	I-131	<1.54E-02	0.00E+00	1.54E-02
		Cs-134	<1.52E-02	0.00E+00	1.52E-02
		Cs-137	<2.06E-02	0.00E+00	2.06E-02
		Be-7	<1.76E-01	0.00E+00	1.76E-01
		K-40	4.71E-01	1.22E-01	2.26E-01
269699	8/26/2013 - 9/3/2013	I-131	<1.52E-02	0.00E+00	1.52E-02
		Cs-134	<9.52E-03	0.00E+00	9.52E-03
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<8.17E-02	0.00E+00	8.17E-02
		K-40	<2.68E-01	0.00E+00	2.68E-01
270607	9/3/2013 - 9/9/2013	I-131	<2.56E-02	0.00E+00	2.56E-02
		Cs-134	<1.92E-02	0.00E+00	1.92E-02
		Cs-137	<2.20E-02	0.00E+00	2.20E-02
		Be-7	<1.47E-01	0.00E+00	1.47E-01
		K-40	4.02E-01	1.52E-01	3.63E-01
271328	9/9/2013 - 9/16/2013	I-131	<2.52E-02	0.00E+00	2.52E-02
		Cs-134	<1.71E-02	0.00E+00	1.71E-02
		Cs-137	<1.35E-02	0.00E+00	1.35E-02
		Be-7	<1.05E-01	0.00E+00	1.05E-01
		K-40	<4.78E-01	0.00E+00	4.78E-01
271713	9/16/2013 - 9/23/2013	I-131	<2.37E-02	0.00E+00	2.37E-02
		Cs-134	<1.11E-02	0.00E+00	1.11E-02
		Cs-137	<2.11E-02	0.00E+00	2.11E-02
		Be-7	<1.64E-01	0.00E+00	1.64E-01
		K-40	4.69E-01	1.14E-01	7.46E-02
272352	9/23/2013 - 9/30/2013	I-131	<2.29E-02	0.00E+00	2.29E-02
		Cs-134	<1.49E-02	0.00E+00	1.49E-02
		Cs-137	<2.13E-02	0.00E+00	2.13E-02
		Be-7	<1.50E-01	0.00E+00	1.50E-01
		K-40	2.17E-01	1.34E-01	3.30E-01
272770	9/30/2013 - 10/7/2013	I-131	<1.24E-02	0.00E+00	1.24E-02
		Cs-134	<1.80E-02	0.00E+00	1.80E-02
		Cs-137	<1.60E-02	0.00E+00	1.60E-02
		Be-7	<1.60E-01	0.00E+00	1.60E-01
		K-40	<6.56E-01	0.00E+00	6.56E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
273996	10/7/2013 - 10/14/2013	I-131	<3.71E-02	0.00E+00	3.71E-02
		Cs-134	<1.97E-02	0.00E+00	1.97E-02
		Cs-137	<1.90E-02	0.00E+00	1.90E-02
		Be-7	<1.52E-01	0.00E+00	1.52E-01
		K-40	4.02E-01	1.08E-01	2.64E-01
274242	10/14/2013 - 10/21/2013	I-131	<2.09E-02	0.00E+00	2.09E-02
		Cs-134	<1.87E-02	0.00E+00	1.87E-02
		Cs-137	<1.85E-02	0.00E+00	1.85E-02
		Be-7	<1.09E-01	0.00E+00	1.09E-01
		K-40	6.15E-01	1.26E-01	2.19E-01
274614	10/21/2013 - 10/28/2013	I-131	<1.32E-02	0.00E+00	1.32E-02
		Cs-134	<1.19E-02	0.00E+00	1.19E-02
		Cs-137	<1.24E-02	0.00E+00	1.24E-02
		Be-7	<9.14E-02	0.00E+00	9.14E-02
		K-40	4.78E-01	1.02E-01	1.81E-01
275202	10/28/2013 - 11/4/2013	I-131	<2.55E-02	0.00E+00	2.55E-02
		Cs-134	<2.09E-02	0.00E+00	2.09E-02
		Cs-137	<1.81E-02	0.00E+00	1.81E-02
		Be-7	<9.21E-02	0.00E+00	9.21E-02
		K-40	5.65E-01	1.23E-01	2.44E-01
277036	11/4/2013 - 11/11/2013	I-131	<2.71E-02	0.00E+00	2.71E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<2.33E-02	0.00E+00	2.33E-02
		Be-7	<7.23E-02	0.00E+00	7.23E-02
		K-40	4.21E-01	1.05E-01	2.92E-01
277046	11/18/2013 - 11/25/2013	I-131	<2.33E-02	0.00E+00	2.33E-02
		Cs-134	<9.84E-03	0.00E+00	9.84E-03
		Cs-137	<1.05E-02	0.00E+00	1.05E-02
		Be-7	<6.18E-02	0.00E+00	6.18E-02
		K-40	<3.67E-01	0.00E+00	3.67E-01
277056	11/11/2013 - 11/18/2013	I-131	<1.90E-02	0.00E+00	1.90E-02
		Cs-134	<1.62E-02	0.00E+00	1.62E-02
		Cs-137	<8.91E-03	0.00E+00	8.91E-03
		Be-7	7.81E-02	3.98E-02	1.09E-01
		K-40	3.44E-01	1.13E-01	2.02E-01
278778	11/25/2013 - 12/2/2013	I-131	<2.03E-02	0.00E+00	2.03E-02
		Cs-134	<2.29E-02	0.00E+00	2.29E-02
		Cs-137	<2.09E-02	0.00E+00	2.09E-02
		Be-7	<1.26E-01	0.00E+00	1.26E-01
		K-40	1.95E-01	9.37E-02	2.71E-01
278849	12/2/2013 - 12/9/2013	I-131	<2.62E-02	0.00E+00	2.62E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.80E-02	0.00E+00	1.80E-02
		Be-7	<1.30E-01	0.00E+00	1.30E-01
		K-40	<4.82E-01	0.00E+00	4.82E-01
279089	12/9/2013 - 12/16/2013	I-131	<2.45E-02	0.00E+00	2.45E-02
		Cs-134	<1.66E-02	0.00E+00	1.66E-02
		Cs-137	<1.07E-02	0.00E+00	1.07E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	<6.15E-01	0.00E+00	6.15E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

## Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279717	12/16/2013 - 12/23/2013	I-131	<2.66E-02	0.00E+00	2.66E-02
		Cs-134	<1.31E-02	0.00E+00	1.31E-02
		Cs-137	<1.05E-02	0.00E+00	1.05E-02
		Be-7	<9.57E-02	0.00E+00	9.57E-02
		K-40	2.47E-01	9.84E-02	1.66E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
280206	12/23/2013 - 12/30/2013	I-131	<4.41E-02	0.00E+00	4.41E-02
		Cs-134	<1.66E-02	0.00E+00	1.66E-02
		Cs-137	<1.59E-02	0.00E+00	1.59E-02
		Be-7	<1.43E-01	0.00E+00	1.43E-01
		K-40	6.31E-01	1.32E-01	2.60E-01

## Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177513	1/7/2013 - 1/7/2013	I-131	<1.85E-02	0.00E+00	1.85E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177576	1/14/2013 - 1/14/2013	I-131	<1.34E-02	0.00E+00	1.34E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177621	1/21/2013 - 1/21/2013	I-131	<1.85E-02	0.00E+00	1.85E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177655	1/28/2013 - 1/28/2013	I-131	<1.78E-02	0.00E+00	1.78E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177689	2/4/2013 - 2/4/2013	I-131	<1.94E-02	0.00E+00	1.94E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177734	2/11/2013 - 2/11/2013	I-131	<1.41E-02	0.00E+00	1.41E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177772	2/18/2013 - 2/18/2013	I-131	<2.20E-02	0.00E+00	2.20E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177843	2/25/2013 - 2/25/2013	I-131	<1.42E-02	0.00E+00	1.42E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177879	3/4/2013 - 3/4/2013	I-131	<2.03E-02	0.00E+00	2.03E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177928	3/11/2013 - 3/11/2013	I-131	<1.28E-02	0.00E+00	1.28E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177964	3/18/2013 - 3/18/2013	I-131	<1.45E-02	0.00E+00	1.45E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177991	3/24/2013 - 3/24/2013	I-131	<2.04E-02	0.00E+00	2.04E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178025	4/1/2013 - 4/1/2013	I-131	<1.40E-02	0.00E+00	1.40E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178095	4/8/2013 - 4/8/2013	I-131	<1.90E-02	0.00E+00	1.90E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256290	4/8/2013 - 4/15/2013	I-131	<1.42E-02	0.00E+00	1.42E-02
		Cs-134	<1.14E-02	0.00E+00	1.14E-02
		Cs-137	<1.13E-02	0.00E+00	1.13E-02
		Be-7	<1.16E-01	0.00E+00	1.16E-01
		K-40	2.32E-01	1.13E-01	2.34E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256648	4/15/2013 - 4/22/2013	I-131	<2.53E-02	0.00E+00	2.53E-02
		Cs-134	<1.56E-02	0.00E+00	1.56E-02
		Cs-137	<1.76E-02	0.00E+00	1.76E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	<4.49E-01	0.00E+00	4.49E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257182	4/22/2013 - 4/29/2013	I-131	<1.53E-02	0.00E+00	1.53E-02
		Cs-134	<1.02E-02	0.00E+00	1.02E-02
		Cs-137	<1.45E-02	0.00E+00	1.45E-02
		Be-7	<4.90E-02	0.00E+00	4.90E-02
		K-40	2.88E-01	7.44E-02	1.43E-01
257327	4/29/2013 - 5/6/2013	I-131	<1.43E-02	0.00E+00	1.43E-02
		Cs-134	<8.46E-03	0.00E+00	8.46E-03
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<7.69E-02	0.00E+00	7.69E-02
		K-40	4.82E-01	8.14E-02	1.02E-01
257772	5/6/2013 - 5/13/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<1.01E-02	0.00E+00	1.01E-02
		Cs-137	<1.34E-02	0.00E+00	1.34E-02
		Be-7	<5.64E-02	0.00E+00	5.64E-02
		K-40	5.55E-01	1.03E-01	1.42E-01
258018	5/13/2013 - 5/20/2013	I-131	<1.14E-02	0.00E+00	1.14E-02
		Cs-134	<6.31E-03	0.00E+00	6.31E-03
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<7.99E-02	0.00E+00	7.99E-02
		K-40	4.77E-01	7.84E-02	9.28E-02
258264	5/20/2013 - 5/26/2013	I-131	<3.20E-02	0.00E+00	3.20E-02
		Cs-134	<1.51E-02	0.00E+00	1.51E-02
		Cs-137	<1.85E-02	0.00E+00	1.85E-02
		Be-7	<1.81E-01	0.00E+00	1.81E-01
		K-40	5.32E-01	1.29E-01	2.69E-01
258600	5/26/2013 - 6/3/2013	I-131	<2.32E-02	0.00E+00	2.32E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<9.56E-02	0.00E+00	9.56E-02
		K-40	2.50E-01	7.54E-02	6.14E-02
259074	6/3/2013 - 6/10/2013	I-131	<1.64E-02	0.00E+00	1.64E-02
		Cs-134	<6.61E-03	0.00E+00	6.61E-03
		Cs-137	<1.35E-02	0.00E+00	1.35E-02
		Be-7	<9.39E-02	0.00E+00	9.39E-02
		K-40	<4.27E-01	0.00E+00	4.27E-01
259638	6/10/2013 - 6/18/2013	I-131	<2.34E-02	0.00E+00	2.34E-02
		Cs-134	<1.52E-02	0.00E+00	1.52E-02
		Cs-137	<1.80E-02	0.00E+00	1.80E-02
		Be-7	<1.09E-01	0.00E+00	1.09E-01
		K-40	6.35E-01	1.22E-01	2.12E-01
260270	6/18/2013 - 6/24/2013	I-131	<1.78E-02	0.00E+00	1.78E-02
		Cs-134	<1.08E-02	0.00E+00	1.08E-02
		Cs-137	<9.62E-03	0.00E+00	9.62E-03
		Be-7	<7.73E-02	0.00E+00	7.73E-02
		K-40	4.25E-01	9.00E-02	1.22E-01
260742	7/1/2013 - 7/8/2013	I-131	<1.46E-02	0.00E+00	1.46E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<1.03E-01	0.00E+00	1.03E-01
		K-40	4.26E-01	1.20E-01	1.65E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
261681	7/8/2013 - 7/15/2013	I-131	<1.68E-02	0.00E+00	1.68E-02
		Cs-134	<1.09E-02	0.00E+00	1.09E-02
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<9.37E-02	0.00E+00	9.37E-02
		K-40	3.84E-01	8.82E-02	5.47E-02
261948	6/24/2013 - 7/1/2013	I-131	<2.32E-02	0.00E+00	2.32E-02
		Cs-134	<1.70E-02	0.00E+00	1.70E-02
		Cs-137	<1.94E-02	0.00E+00	1.94E-02
		Be-7	<1.10E-01	0.00E+00	1.10E-01
		K-40	4.83E-01	1.14E-01	2.30E-01
262191	7/15/2013 - 7/22/2013	I-131	<2.03E-02	0.00E+00	2.03E-02
		Cs-134	<1.38E-02	0.00E+00	1.38E-02
		Cs-137	<2.01E-02	0.00E+00	2.01E-02
		Be-7	<9.75E-02	0.00E+00	9.75E-02
		K-40	6.57E-01	1.32E-01	2.51E-01
263647	7/29/2013 - 8/5/2013	I-131	<2.14E-02	0.00E+00	2.14E-02
		Cs-134	<1.46E-02	0.00E+00	1.46E-02
		Cs-137	<9.40E-03	0.00E+00	9.40E-03
		Be-7	<1.59E-01	0.00E+00	1.59E-01
		K-40	3.74E-01	1.25E-01	2.59E-01
265037	7/22/2013 - 7/29/2013	I-131	<3.90E-02	0.00E+00	3.90E-02
		Cs-134	<2.22E-02	0.00E+00	2.22E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.52E-01	0.00E+00	1.52E-01
		K-40	<4.93E-01	0.00E+00	4.93E-01
266654	8/5/2013 - 8/12/2013	I-131	<1.78E-02	0.00E+00	1.78E-02
		Cs-134	<1.78E-02	0.00E+00	1.78E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.68E-01	0.00E+00	1.68E-01
		K-40	<4.62E-01	0.00E+00	4.62E-01
267534	8/12/2013 - 8/20/2013	I-131	<2.61E-02	0.00E+00	2.61E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.62E-02	0.00E+00	1.62E-02
		Be-7	<1.20E-01	0.00E+00	1.20E-01
		K-40	2.50E-01	1.01E-01	2.15E-01
268229	8/20/2013 - 8/26/2013	I-131	<2.59E-02	0.00E+00	2.59E-02
		Cs-134	<1.50E-02	0.00E+00	1.50E-02
		Cs-137	<1.49E-02	0.00E+00	1.49E-02
		Be-7	<1.48E-01	0.00E+00	1.48E-01
		K-40	4.88E-01	1.52E-01	2.80E-01
269700	8/26/2013 - 9/3/2013	I-131	<2.24E-02	0.00E+00	2.24E-02
		Cs-134	<1.45E-02	0.00E+00	1.45E-02
		Cs-137	<1.21E-02	0.00E+00	1.21E-02
		Be-7	<1.29E-01	0.00E+00	1.29E-01
		K-40	3.37E-01	1.17E-01	2.75E-01
270608	9/3/2013 - 9/9/2013	I-131	<1.84E-02	0.00E+00	1.84E-02
		Cs-134	<1.99E-02	0.00E+00	1.99E-02
		Cs-137	<1.76E-02	0.00E+00	1.76E-02
		Be-7	<1.32E-01	0.00E+00	1.32E-01
		K-40	<5.39E-01	0.00E+00	5.39E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271329	9/9/2013 - 9/16/2013	I-131	<1.79E-02	0.00E+00	1.79E-02
		Cs-134	<1.90E-02	0.00E+00	1.90E-02
		Cs-137	<1.91E-02	0.00E+00	1.91E-02
		Be-7	<1.62E-01	0.00E+00	1.62E-01
		K-40	3.22E-01	9.30E-02	2.46E-01
271714	9/16/2013 - 9/23/2013	I-131	<2.48E-02	0.00E+00	2.48E-02
		Cs-134	<1.46E-02	0.00E+00	1.46E-02
		Cs-137	<1.39E-02	0.00E+00	1.39E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	<5.19E-01	0.00E+00	5.19E-01
272353	9/23/2013 - 9/30/2013	I-131	<2.33E-02	0.00E+00	2.33E-02
		Cs-134	<1.29E-02	0.00E+00	1.29E-02
		Cs-137	<1.99E-02	0.00E+00	1.99E-02
		Be-7	<1.66E-01	0.00E+00	1.66E-01
		K-40	5.89E-01	1.52E-01	2.65E-01
272771	9/30/2013 - 10/7/2013	I-131	<3.67E-02	0.00E+00	3.67E-02
		Cs-134	<1.78E-02	0.00E+00	1.78E-02
		Cs-137	<2.33E-02	0.00E+00	2.33E-02
		Be-7	<1.62E-01	0.00E+00	1.62E-01
		K-40	<5.57E-01	0.00E+00	5.57E-01
273997	10/7/2013 - 10/14/2013	I-131	<2.33E-02	0.00E+00	2.33E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.28E-02	0.00E+00	1.28E-02
		Be-7	<1.02E-01	0.00E+00	1.02E-01
		K-40	4.84E-01	1.03E-01	5.95E-02
274243	10/14/2013 - 10/21/2013	I-131	<1.38E-02	0.00E+00	1.38E-02
		Cs-134	<7.57E-03	0.00E+00	7.57E-03
		Cs-137	<8.10E-03	0.00E+00	8.10E-03
		Be-7	<6.85E-02	0.00E+00	6.85E-02
		K-40	2.07E-01	9.56E-02	1.93E-01
274615	10/21/2013 - 10/28/2013	I-131	<2.96E-02	0.00E+00	2.96E-02
		Cs-134	<1.51E-02	0.00E+00	1.51E-02
		Cs-137	<2.18E-02	0.00E+00	2.18E-02
		Be-7	<1.08E-01	0.00E+00	1.08E-01
		K-40	3.78E-01	1.01E-01	2.04E-01
275203	10/28/2013 - 11/4/2013	I-131	<2.57E-02	0.00E+00	2.57E-02
		Cs-134	<1.88E-02	0.00E+00	1.88E-02
		Cs-137	<1.60E-02	0.00E+00	1.60E-02
		Be-7	<1.51E-01	0.00E+00	1.51E-01
		K-40	<5.28E-01	0.00E+00	5.28E-01
277037	11/4/2013 - 11/11/2013	I-131	<2.44E-02	0.00E+00	2.44E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<2.23E-02	0.00E+00	2.23E-02
		Be-7	<1.12E-01	0.00E+00	1.12E-01
		K-40	2.91E-01	1.27E-01	7.14E-02
277047	11/18/2013 - 11/25/2013	I-131	<2.44E-02	0.00E+00	2.44E-02
		Cs-134	<9.06E-03	0.00E+00	9.06E-03
		Cs-137	<1.07E-02	0.00E+00	1.07E-02
		Be-7	<1.08E-01	0.00E+00	1.08E-01
		K-40	2.98E-01	1.05E-01	2.71E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277057	11/11/2013 - 11/18/2013	I-131	<1.16E-02	0.00E+00	1.16E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<7.21E-03	0.00E+00	7.21E-03
		Be-7	<7.47E-02	0.00E+00	7.47E-02
		K-40	4.85E-01	9.53E-02	1.39E-01
278779	11/25/2013 - 12/2/2013	I-131	<1.88E-02	0.00E+00	1.88E-02
		Cs-134	<1.69E-02	0.00E+00	1.69E-02
		Cs-137	<2.40E-02	0.00E+00	2.40E-02
		Be-7	<1.69E-01	0.00E+00	1.69E-01
		K-40	2.94E-01	8.86E-02	2.79E-01
278850	12/2/2013 - 12/9/2013	I-131	<1.14E-02	0.00E+00	1.14E-02
		Cs-134	<8.51E-03	0.00E+00	8.51E-03
		Cs-137	<6.92E-03	0.00E+00	6.92E-03
		Be-7	3.14E-02	1.97E-02	7.83E-02
		K-40	4.62E-01	7.98E-02	1.19E-01
279090	12/9/2013 - 12/16/2013	I-131	<2.26E-02	0.00E+00	2.26E-02
		Cs-134	<1.22E-02	0.00E+00	1.22E-02
		Cs-137	<1.64E-02	0.00E+00	1.64E-02
		Be-7	<1.47E-01	0.00E+00	1.47E-01
		K-40	3.11E-01	1.17E-01	1.93E-01
279718	12/16/2013 - 12/23/2013	I-131	<2.09E-02	0.00E+00	2.09E-02
		Cs-134	<6.92E-03	0.00E+00	6.92E-03
		Cs-137	<8.37E-03	0.00E+00	8.37E-03
		Be-7	<7.37E-02	0.00E+00	7.37E-02
		K-40	5.37E-01	9.17E-02	1.51E-01
280207	12/23/2013 - 12/30/2013	I-131	<1.96E-02	0.00E+00	1.96E-02
		Cs-134	<6.20E-03	0.00E+00	6.20E-03
		Cs-137	<9.73E-03	0.00E+00	9.73E-03
		Be-7	<6.54E-02	0.00E+00	6.54E-02
		K-40	6.61E-01	9.28E-02	1.00E-01

## Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

277514	1/7/2013 - 1/7/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.59E-02	0.00E+00	1.59E-02
277577	1/14/2013 - 1/14/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.37E-02	0.00E+00	1.37E-02
277622	1/21/2013 - 1/21/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.65E-02	0.00E+00	1.65E-02
277656	1/28/2013 - 1/28/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<2.51E-02	0.00E+00	2.51E-02
277690	2/4/2013 - 2/4/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.53E-02	0.00E+00	1.53E-02
277735	2/11/2013 - 2/11/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.37E-02	0.00E+00	1.37E-02
277773	2/18/2013 - 2/18/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.61E-02	0.00E+00	1.61E-02
277844	2/25/2013 - 2/25/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.59E-02	0.00E+00	1.59E-02
277880	3/4/2013 - 3/4/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
		I-131	<1.59E-02	0.00E+00	1.59E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177929	3/11/2013 - 3/11/2013	I-131	<1.86E-02	0.00E+00	1.86E-02
177965	3/18/2013 - 3/18/2013	I-131	<1.73E-02	0.00E+00	1.73E-02
177992	3/24/2013 - 3/24/2013	I-131	<1.53E-02	0.00E+00	1.53E-02
178026	4/1/2013 - 4/1/2013	I-131	<1.86E-02	0.00E+00	1.86E-02
178096	4/8/2013 - 4/8/2013	I-131	<1.72E-02	0.00E+00	1.72E-02
256291	4/8/2013 - 4/15/2013	I-131	<7.82E-03	0.00E+00	7.82E-03
		Cs-134	<9.74E-03	0.00E+00	9.74E-03
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<6.52E-02	0.00E+00	6.52E-02
		K-40	3.17E-01	6.35E-02	1.66E-01
256649	4/15/2013 - 4/22/2013	I-131	<2.08E-02	0.00E+00	2.08E-02
		Cs-134	<1.12E-02	0.00E+00	1.12E-02
		Cs-137	<1.19E-02	0.00E+00	1.19E-02
		Be-7	<1.05E-01	0.00E+00	1.05E-01
		K-40	4.07E-01	9.09E-02	1.48E-01
257183	4/22/2013 - 4/29/2013	I-131	<1.14E-02	0.00E+00	1.14E-02
		Cs-134	<9.07E-03	0.00E+00	9.07E-03
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<8.04E-02	0.00E+00	8.04E-02
		K-40	4.05E-01	9.08E-02	1.49E-01
257328	4/29/2013 - 5/6/2013	I-131	<1.54E-02	0.00E+00	1.54E-02
		Cs-134	<1.23E-02	0.00E+00	1.23E-02
		Cs-137	<1.24E-02	0.00E+00	1.24E-02
		Be-7	<7.77E-02	0.00E+00	7.77E-02
		K-40	2.03E-01	7.23E-02	3.62E-02
257773	5/6/2013 - 5/13/2013	I-131	<7.13E-03	0.00E+00	7.13E-03
		Cs-134	<4.85E-03	0.00E+00	4.85E-03
		Cs-137	<5.62E-03	0.00E+00	5.62E-03
		Be-7	<4.03E-02	0.00E+00	4.03E-02
		K-40	5.12E-01	4.55E-02	6.64E-02
258019	5/13/2013 - 5/20/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<2.37E-03	0.00E+00	2.37E-03
		Cs-137	<1.14E-02	0.00E+00	1.14E-02
		Be-7	<7.18E-02	0.00E+00	7.18E-02
		K-40	2.06E-01	6.22E-02	5.07E-02
258265	5/20/2013 - 5/26/2013	I-131	<3.32E-02	0.00E+00	3.32E-02
		Cs-134	<2.15E-02	0.00E+00	2.15E-02
		Cs-137	<1.82E-02	0.00E+00	1.82E-02
		Be-7	<1.33E-01	0.00E+00	1.33E-01
		K-40	6.45E-01	1.41E-01	2.21E-01
258601	5/26/2013 - 6/3/2013	I-131	<2.55E-02	0.00E+00	2.55E-02
		Cs-134	<7.87E-03	0.00E+00	7.87E-03
		Cs-137	<9.01E-03	0.00E+00	9.01E-03
		Be-7	<9.36E-02	0.00E+00	9.36E-02
		K-40	2.68E-01	9.71E-02	1.68E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259075	6/3/2013 - 6/10/2013	I-131	<1.44E-02	0.00E+00	1.44E-02
		Cs-134	<8.37E-03	0.00E+00	8.37E-03
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<8.16E-02	0.00E+00	8.16E-02
		K-40	4.37E-01	9.97E-02	3.70E-02
259639	6/10/2013 - 6/18/2013	I-131	<2.22E-02	0.00E+00	2.22E-02
		Cs-134	<1.47E-02	0.00E+00	1.47E-02
		Cs-137	<1.49E-02	0.00E+00	1.49E-02
		Be-7	<9.29E-02	0.00E+00	9.29E-02
		K-40	3.87E-01	1.13E-01	6.49E-02
260271	6/18/2013 - 6/24/2013	I-131	<1.77E-02	0.00E+00	1.77E-02
		Cs-134	<1.61E-02	0.00E+00	1.61E-02
		Cs-137	<9.51E-03	0.00E+00	9.51E-03
		Be-7	<1.14E-01	0.00E+00	1.14E-01
		K-40	2.77E-01	7.99E-02	2.14E-01
260743	7/1/2013 - 7/8/2013	I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<7.94E-03	0.00E+00	7.94E-03
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<4.68E-02	0.00E+00	4.68E-02
		K-40	4.02E-01	8.43E-02	9.69E-02
261682	7/8/2013 - 7/15/2013	I-131	<1.32E-02	0.00E+00	1.32E-02
		Cs-134	<8.03E-03	0.00E+00	8.03E-03
		Cs-137	<1.24E-02	0.00E+00	1.24E-02
		Be-7	<9.71E-02	0.00E+00	9.71E-02
		K-40	4.80E-01	7.78E-02	9.16E-02
261949	6/24/2013 - 7/1/2013	I-131	<2.27E-02	0.00E+00	2.27E-02
		Cs-134	<2.46E-02	0.00E+00	2.46E-02
		Cs-137	<1.99E-02	0.00E+00	1.99E-02
		Be-7	<1.58E-01	0.00E+00	1.58E-01
		K-40	5.15E-01	1.18E-01	7.33E-02
262192	7/15/2013 - 7/22/2013	I-131	<1.80E-02	0.00E+00	1.80E-02
		Cs-134	<1.83E-02	0.00E+00	1.83E-02
		Cs-137	<1.99E-02	0.00E+00	1.99E-02
		Be-7	<1.62E-01	0.00E+00	1.62E-01
		K-40	<5.01E-01	0.00E+00	5.01E-01
263648	7/29/2013 - 8/5/2013	I-131	<2.56E-02	0.00E+00	2.56E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<2.02E-02	0.00E+00	2.02E-02
		Be-7	<1.35E-01	0.00E+00	1.35E-01
		K-40	5.33E-01	1.22E-01	3.78E-01
265038	7/22/2013 - 7/29/2013	I-131	<3.58E-02	0.00E+00	3.58E-02
		Cs-134	<1.96E-02	0.00E+00	1.96E-02
		Cs-137	<1.08E-02	0.00E+00	1.08E-02
		Be-7	<1.46E-01	0.00E+00	1.46E-01
		K-40	3.75E-01	1.00E-01	1.92E-01
266655	8/5/2013 - 8/12/2013	I-131	<1.84E-02	0.00E+00	1.84E-02
		Cs-134	<1.69E-02	0.00E+00	1.69E-02
		Cs-137	<1.41E-02	0.00E+00	1.41E-02
		Be-7	<1.46E-01	0.00E+00	1.46E-01
		K-40	5.26E-01	1.21E-01	3.23E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.

# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
267535	8/12/2013 - 8/20/2013	I-131	<2.22E-02	0.00E+00	2.22E-02
		Cs-134	<1.04E-02	0.00E+00	1.04E-02
		Cs-137	<1.55E-02	0.00E+00	1.55E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	4.33E-01	1.02E-01	2.80E-01
268230	8/20/2013 - 8/26/2013	I-131	<2.50E-02	0.00E+00	2.50E-02
		Cs-134	<1.95E-02	0.00E+00	1.95E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<1.45E-01	0.00E+00	1.45E-01
		K-40	6.71E-01	1.46E-01	2.30E-01
269701	8/26/2013 - 9/3/2013	I-131	<1.31E-02	0.00E+00	1.31E-02
		Cs-134	<7.29E-03	0.00E+00	7.29E-03
		Cs-137	<1.29E-02	0.00E+00	1.29E-02
		Be-7	<9.13E-02	0.00E+00	9.13E-02
		K-40	<3.52E-01	0.00E+00	3.52E-01
270609	9/3/2013 - 9/9/2013	I-131	<2.72E-02	0.00E+00	2.72E-02
		Cs-134	<2.46E-02	0.00E+00	2.46E-02
		Cs-137	<2.42E-02	0.00E+00	2.42E-02
		Be-7	<1.26E-01	0.00E+00	1.26E-01
		K-40	3.67E-01	1.63E-01	3.55E-01
271330	9/9/2013 - 9/16/2013	I-131	<2.92E-02	0.00E+00	2.92E-02
		Cs-134	<2.01E-02	0.00E+00	2.01E-02
		Cs-137	<1.92E-02	0.00E+00	1.92E-02
		Be-7	<1.27E-01	0.00E+00	1.27E-01
		K-40	5.13E-01	1.18E-01	2.34E-01
271715	9/16/2013 - 9/23/2013	I-131	<2.63E-02	0.00E+00	2.63E-02
		Cs-134	<1.76E-02	0.00E+00	1.76E-02
		Cs-137	<2.00E-02	0.00E+00	2.00E-02
		Be-7	<1.46E-01	0.00E+00	1.46E-01
		K-40	4.24E-01	1.09E-01	2.53E-01
272354	9/23/2013 - 9/30/2013	I-131	<2.59E-02	0.00E+00	2.59E-02
		Cs-134	<1.76E-02	0.00E+00	1.76E-02
		Cs-137	<1.82E-02	0.00E+00	1.82E-02
		Be-7	<1.70E-01	0.00E+00	1.70E-01
		K-40	<4.37E-01	0.00E+00	4.37E-01
272772	9/30/2013 - 10/3/2013	I-131	<6.52E-02	0.00E+00	6.52E-02
		Cs-134	<3.07E-02	0.00E+00	3.07E-02
		Cs-137	<3.86E-02	0.00E+00	3.86E-02
		Be-7	<2.60E-01	0.00E+00	2.60E-01
		K-40	1.34E+00	2.11E-01	3.72E-01
273998	10/7/2013 - 10/14/2013	I-131	<6.88E-02	0.00E+00	6.88E-02
		Cs-134	<3.57E-02	0.00E+00	3.57E-02
		Cs-137	<3.29E-02	0.00E+00	3.29E-02
		Be-7	<4.26E-01	0.00E+00	4.26E-01
		K-40	1.11E+00	2.48E-01	5.07E-01
274244	10/14/2013 - 10/21/2013	I-131	<2.89E-02	0.00E+00	2.89E-02
		Cs-134	<1.67E-02	0.00E+00	1.67E-02
		Cs-137	<2.50E-02	0.00E+00	2.50E-02
		Be-7	<1.48E-01	0.00E+00	1.48E-01
		K-40	<5.05E-01	0.00E+00	5.05E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
274616	10/21/2013 - 10/28/2013	I-131	<1.19E-02	0.00E+00	1.19E-02
		Cs-134	<1.46E-02	0.00E+00	1.46E-02
		Cs-137	<1.69E-02	0.00E+00	1.69E-02
		Be-7	<9.74E-02	0.00E+00	9.74E-02
		K-40	<4.71E-01	0.00E+00	4.71E-01
275204	10/28/2013 - 11/4/2013	I-131	<2.16E-02	0.00E+00	2.16E-02
		Cs-134	<1.88E-02	0.00E+00	1.88E-02
		Cs-137	<1.88E-02	0.00E+00	1.88E-02
		Be-7	<1.58E-01	0.00E+00	1.58E-01
		K-40	3.84E-01	1.02E-01	7.40E-02
277038	11/4/2013 - 11/11/2013	I-131	<1.78E-02	0.00E+00	1.78E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.82E-02	0.00E+00	1.82E-02
		Be-7	<1.40E-01	0.00E+00	1.40E-01
		K-40	<3.77E-01	0.00E+00	3.77E-01
277048	11/18/2013 - 11/25/2013	I-131	<2.50E-02	0.00E+00	2.50E-02
		Cs-134	<8.89E-03	0.00E+00	8.89E-03
		Cs-137	<8.51E-03	0.00E+00	8.51E-03
		Be-7	<7.60E-02	0.00E+00	7.60E-02
		K-40	<3.69E-01	0.00E+00	3.69E-01
277058	11/11/2013 - 11/18/2013	I-131	<1.20E-02	0.00E+00	1.20E-02
		Cs-134	<6.50E-03	0.00E+00	6.50E-03
		Cs-137	<1.48E-02	0.00E+00	1.48E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
		K-40	2.74E-01	7.31E-02	1.67E-01
278780	11/25/2013 - 12/2/2013	I-131	<2.38E-02	0.00E+00	2.38E-02
		Cs-134	<1.73E-02	0.00E+00	1.73E-02
		Cs-137	<1.53E-02	0.00E+00	1.53E-02
		Be-7	<1.30E-01	0.00E+00	1.30E-01
		K-40	2.72E-01	1.13E-01	2.99E-01
278851	12/2/2013 - 12/9/2013	I-131	<1.03E-02	0.00E+00	1.03E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.17E-02	0.00E+00	1.17E-02
		Be-7	<8.86E-02	0.00E+00	8.86E-02
		K-40	6.79E-01	9.32E-02	9.77E-02
279091	12/9/2013 - 12/16/2013	I-131	<2.62E-02	0.00E+00	2.62E-02
		Cs-134	<2.08E-02	0.00E+00	2.08E-02
		Cs-137	<1.77E-02	0.00E+00	1.77E-02
		Be-7	<1.03E-01	0.00E+00	1.03E-01
		K-40	4.70E-01	1.14E-01	3.23E-01
279719	12/16/2013 - 12/23/2013	I-131	<2.38E-02	0.00E+00	2.38E-02
		Cs-134	<1.17E-02	0.00E+00	1.17E-02
		Cs-137	<1.67E-02	0.00E+00	1.67E-02
		Be-7	<1.04E-01	0.00E+00	1.04E-01
		K-40	<3.37E-01	0.00E+00	3.37E-01
280208	12/23/2013 - 12/30/2013	I-131	<1.21E-02	0.00E+00	1.21E-02
		Cs-134	<6.69E-03	0.00E+00	6.69E-03
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<9.31E-02	0.00E+00	9.31E-02
		K-40	<4.92E-01	0.00E+00	4.92E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177515	1/7/2013 - 1/7/2013	I-131	<1.39E-02	0.00E+00	1.39E-02
177578	1/14/2013 - 1/14/2013	I-131	<1.56E-02	0.00E+00	1.56E-02
177623	1/21/2013 - 1/21/2013	I-131	<1.17E-02	0.00E+00	1.17E-02
177657	1/28/2013 - 1/28/2013	I-131	<1.67E-02	0.00E+00	1.67E-02
177691	2/4/2013 - 2/4/2013	I-131	<2.23E-02	0.00E+00	2.23E-02
177736	2/11/2013 - 2/11/2013	I-131	<1.65E-02	0.00E+00	1.65E-02
177774	2/18/2013 - 2/18/2013	I-131	<1.02E-02	0.00E+00	1.02E-02
177845	2/25/2013 - 2/25/2013	I-131	<2.01E-02	0.00E+00	2.01E-02
177881	3/4/2013 - 3/4/2013	I-131	<1.38E-02	0.00E+00	1.38E-02
177930	3/11/2013 - 3/11/2013	I-131	<1.72E-02	0.00E+00	1.72E-02
177966	3/18/2013 - 3/18/2013	I-131	<2.20E-02	0.00E+00	2.20E-02
177993	3/24/2013 - 3/24/2013	I-131	<2.19E-02	0.00E+00	2.19E-02
178027	4/1/2013 - 4/1/2013	I-131	<1.59E-02	0.00E+00	1.59E-02
178097	4/8/2013 - 4/8/2013	I-131	<1.67E-02	0.00E+00	1.67E-02
256292	4/8/2013 - 4/15/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<6.93E-03	0.00E+00	6.93E-03
		Cs-137	<1.07E-02	0.00E+00	1.07E-02
		Be-7	<7.02E-02	0.00E+00	7.02E-02
		K-40	3.18E-01	6.35E-02	9.20E-02
256650	4/15/2013 - 4/22/2013	I-131	<1.95E-02	0.00E+00	1.95E-02
		Cs-134	<1.39E-02	0.00E+00	1.39E-02
		Cs-137	<1.04E-02	0.00E+00	1.04E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	<3.58E-01	0.00E+00	3.58E-01
257184	4/22/2013 - 4/29/2013	I-131	<1.60E-02	0.00E+00	1.60E-02
		Cs-134	<9.25E-03	0.00E+00	9.25E-03
		Cs-137	<1.35E-02	0.00E+00	1.35E-02
		Be-7	<5.95E-02	0.00E+00	5.95E-02
		K-40	3.77E-01	7.12E-02	3.64E-02
257329	4/29/2013 - 5/6/2013	I-131	<1.48E-02	0.00E+00	1.48E-02
		Cs-134	<8.34E-03	0.00E+00	8.34E-03
		Cs-137	<1.14E-02	0.00E+00	1.14E-02
		Be-7	<8.55E-02	0.00E+00	8.55E-02
		K-40	4.59E-01	9.58E-02	5.40E-02
257774	5/6/2013 - 5/13/2013	I-131	<1.23E-02	0.00E+00	1.23E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257774	5/6/2013 - 5/13/2013	Cs-134	<8.66E-03	0.00E+00	8.66E-03
		Cs-137	<1.14E-02	0.00E+00	1.14E-02
		Be-7	<5.32E-02	0.00E+00	5.32E-02
		K-40	4.84E-01	8.08E-02	9.86E-02
258020	5/13/2013 - 5/20/2013	I-131	<1.69E-02	0.00E+00	1.69E-02
		Cs-134	<9.58E-03	0.00E+00	9.58E-03
		Cs-137	<1.12E-02	0.00E+00	1.12E-02
		Be-7	<7.91E-02	0.00E+00	7.91E-02
258266	5/20/2013 - 5/26/2013	I-131	<3.49E-02	0.00E+00	3.49E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<2.14E-02	0.00E+00	2.14E-02
		Be-7	<1.90E-01	0.00E+00	1.90E-01
258602	5/26/2013 - 6/3/2013	I-131	<2.58E-02	0.00E+00	2.58E-02
		Cs-134	<1.79E-02	0.00E+00	1.79E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<1.51E-01	0.00E+00	1.51E-01
259076	6/3/2013 - 6/10/2013	I-131	<1.56E-02	0.00E+00	1.56E-02
		Cs-134	<7.86E-03	0.00E+00	7.86E-03
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<8.40E-02	0.00E+00	8.40E-02
259640	6/10/2013 - 6/18/2013	I-131	<2.47E-02	0.00E+00	2.47E-02
		Cs-134	<1.61E-02	0.00E+00	1.61E-02
		Cs-137	<1.33E-02	0.00E+00	1.33E-02
		Be-7	<1.55E-01	0.00E+00	1.55E-01
260272	6/18/2013 - 6/24/2013	I-131	<1.18E-02	0.00E+00	1.18E-02
		Cs-134	<6.76E-03	0.00E+00	6.76E-03
		Cs-137	<8.86E-03	0.00E+00	8.86E-03
		Be-7	<6.33E-02	0.00E+00	6.33E-02
260744	7/1/2013 - 7/8/2013	I-131	<1.34E-02	0.00E+00	1.34E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.90E-02	0.00E+00	1.90E-02
		Be-7	<8.33E-02	0.00E+00	8.33E-02
261683	7/8/2013 - 7/15/2013	I-131	<7.57E-03	0.00E+00	7.57E-03
		Cs-134	<9.46E-03	0.00E+00	9.46E-03
		Cs-137	<8.19E-03	0.00E+00	8.19E-03
		Be-7	<8.31E-02	0.00E+00	8.31E-02
261950	6/24/2013 - 7/1/2013	I-131	<2.41E-02	0.00E+00	2.41E-02
		Cs-134	<1.93E-02	0.00E+00	1.93E-02
		Cs-137	<1.99E-02	0.00E+00	1.99E-02
		Be-7	<1.52E-01	0.00E+00	1.52E-01
		K-40	<5.71E-01	0.00E+00	5.71E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
262193	7/15/2013 - 7/22/2013	I-131	<2.58E-02	0.00E+00	2.58E-02
		Cs-134	<1.97E-02	0.00E+00	1.97E-02
		Cs-137	<2.70E-02	0.00E+00	2.70E-02
		Be-7	<1.65E-01	0.00E+00	1.65E-01
		K-40	3.41E-01	1.44E-01	7.61E-02
263649	7/29/2013 - 8/5/2013	I-131	<2.01E-02	0.00E+00	2.01E-02
		Cs-134	<1.59E-02	0.00E+00	1.59E-02
		Cs-137	<1.76E-02	0.00E+00	1.76E-02
		Be-7	<1.76E-01	0.00E+00	1.76E-01
		K-40	5.00E-01	1.18E-01	2.09E-01
265039	7/22/2013 - 7/29/2013	I-131	<3.58E-02	0.00E+00	3.58E-02
		Cs-134	<1.49E-02	0.00E+00	1.49E-02
		Cs-137	<2.40E-02	0.00E+00	2.40E-02
		Be-7	<1.60E-01	0.00E+00	1.60E-01
		K-40	3.94E-01	1.05E-01	7.60E-02
266656	8/5/2013 - 8/12/2013	I-131	<2.16E-02	0.00E+00	2.16E-02
		Cs-134	<2.12E-02	0.00E+00	2.12E-02
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<1.74E-01	0.00E+00	1.74E-01
		K-40	5.26E-01	1.50E-01	3.10E-01
267536	8/12/2013 - 8/20/2013	I-131	<1.78E-02	0.00E+00	1.78E-02
		Cs-134	<9.48E-03	0.00E+00	9.48E-03
		Cs-137	<8.28E-03	0.00E+00	8.28E-03
		Be-7	<9.41E-02	0.00E+00	9.41E-02
		K-40	2.75E-01	8.52E-02	1.54E-01
268231	8/20/2013 - 8/26/2013	I-131	<3.10E-02	0.00E+00	3.10E-02
		Cs-134	<2.07E-02	0.00E+00	2.07E-02
		Cs-137	<2.32E-02	0.00E+00	2.32E-02
		Be-7	<1.59E-01	0.00E+00	1.59E-01
		K-40	5.49E-01	1.33E-01	2.32E-01
269702	8/26/2013 - 9/3/2013	I-131	<2.33E-02	0.00E+00	2.33E-02
		Cs-134	<1.69E-02	0.00E+00	1.69E-02
		Cs-137	<1.41E-02	0.00E+00	1.41E-02
		Be-7	<8.84E-02	0.00E+00	8.84E-02
		K-40	2.93E-01	8.45E-02	1.75E-01
270610	9/3/2013 - 9/9/2013	I-131	<2.04E-02	0.00E+00	2.04E-02
		Cs-134	<2.00E-02	0.00E+00	2.00E-02
		Cs-137	<1.90E-02	0.00E+00	1.90E-02
		Be-7	<1.87E-01	0.00E+00	1.87E-01
		K-40	7.06E-01	1.50E-01	8.67E-02
271331	9/9/2013 - 9/16/2013	I-131	<2.14E-02	0.00E+00	2.14E-02
		Cs-134	<1.98E-02	0.00E+00	1.98E-02
		Cs-137	<1.62E-02	0.00E+00	1.62E-02
		Be-7	<1.70E-01	0.00E+00	1.70E-01
		K-40	<5.08E-01	0.00E+00	5.08E-01
271716	9/16/2013 - 9/23/2013	I-131	<2.26E-02	0.00E+00	2.26E-02
		Cs-134	<1.82E-02	0.00E+00	1.82E-02
		Cs-137	<1.99E-02	0.00E+00	1.99E-02
		Be-7	<1.25E-01	0.00E+00	1.25E-01
		K-40	4.27E-01	1.10E-01	2.15E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272355	9/23/2013 - 9/30/2013	I-131	<2.78E-02	0.00E+00	2.78E-02
		Cs-134	<2.12E-02	0.00E+00	2.12E-02
		Cs-137	<2.02E-02	0.00E+00	2.02E-02
		Be-7	<1.39E-01	0.00E+00	1.39E-01
		K-40	3.84E-01	1.77E-01	4.17E-01
272773	9/30/2013 - 10/7/2013	I-131	<2.46E-02	0.00E+00	2.46E-02
		Cs-134	<1.21E-02	0.00E+00	1.21E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	4.19E-01	1.08E-01	2.12E-01
273999	10/7/2013 - 10/14/2013	I-131	<1.87E-02	0.00E+00	1.87E-02
		Cs-134	<7.63E-03	0.00E+00	7.63E-03
		Cs-137	<9.81E-03	0.00E+00	9.81E-03
		Be-7	<4.54E-02	0.00E+00	4.54E-02
		K-40	5.48E-01	7.92E-02	8.28E-02
274245	10/14/2013 - 10/21/2013	I-131	<1.49E-02	0.00E+00	1.49E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.67E-02	0.00E+00	1.67E-02
		Be-7	<5.65E-02	0.00E+00	5.65E-02
		K-40	2.99E-01	1.12E-01	1.57E-01
274617	10/21/2013 - 10/28/2013	I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<9.20E-03	0.00E+00	9.20E-03
		Cs-137	<1.03E-02	0.00E+00	1.03E-02
		Be-7	<6.77E-02	0.00E+00	6.77E-02
		K-40	<2.94E-01	0.00E+00	2.94E-01
275205	10/28/2013 - 11/4/2013	I-131	<2.38E-02	0.00E+00	2.38E-02
		Cs-134	<1.69E-02	0.00E+00	1.69E-02
		Cs-137	<2.06E-02	0.00E+00	2.06E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	3.87E-01	1.04E-01	2.50E-01
277039	11/4/2013 - 11/11/2013	I-131	<2.60E-02	0.00E+00	2.60E-02
		Cs-134	<2.10E-02	0.00E+00	2.10E-02
		Cs-137	<1.42E-02	0.00E+00	1.42E-02
		Be-7	<1.33E-01	0.00E+00	1.33E-01
		K-40	<4.71E-01	0.00E+00	4.71E-01
277049	11/18/2013 - 11/25/2013	I-131	<3.36E-02	0.00E+00	3.36E-02
		Cs-134	<1.11E-02	0.00E+00	1.11E-02
		Cs-137	<1.17E-02	0.00E+00	1.17E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	5.90E-01	1.18E-01	6.38E-02
277059	11/11/2013 - 11/18/2013	I-131	<1.18E-02	0.00E+00	1.18E-02
		Cs-134	<9.04E-03	0.00E+00	9.04E-03
		Cs-137	<1.39E-02	0.00E+00	1.39E-02
		Be-7	<9.73E-02	0.00E+00	9.73E-02
		K-40	4.50E-01	7.60E-02	9.25E-02
278781	11/25/2013 - 12/2/2013	I-131	<6.76E-02	0.00E+00	6.76E-02
		Cs-134	<1.88E-02	0.00E+00	1.88E-02
		Cs-137	<1.28E-02	0.00E+00	1.28E-02
		Be-7	<1.39E-01	0.00E+00	1.39E-01
		K-40	3.28E-01	1.56E-01	3.22E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
278852	12/2/2013 - 12/9/2013	I-131	<2.12E-02	0.00E+00	2.12E-02
		Cs-134	<2.04E-02	0.00E+00	2.04E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.55E-01	0.00E+00	1.55E-01
		K-40	<5.41E-01	0.00E+00	5.41E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279092	12/9/2013 - 12/16/2013	I-131	<2.19E-02	0.00E+00	2.19E-02
		Cs-134	<1.70E-02	0.00E+00	1.70E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<1.34E-01	0.00E+00	1.34E-01
		K-40	<5.52E-01	0.00E+00	5.52E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279720	12/16/2013 - 12/23/2013	I-131	<2.89E-02	0.00E+00	2.89E-02
		Cs-134	<8.06E-03	0.00E+00	8.06E-03
		Cs-137	<1.39E-02	0.00E+00	1.39E-02
		Be-7	<1.20E-01	0.00E+00	1.20E-01
		K-40	1.62E-01	1.07E-01	2.55E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
280209	12/23/2013 - 12/30/2013	I-131	<4.23E-02	0.00E+00	4.23E-02
		Cs-134	<1.05E-02	0.00E+00	1.05E-02
		Cs-137	<1.13E-02	0.00E+00	1.13E-02
		Be-7	<8.16E-02	0.00E+00	8.16E-02
		K-40	4.17E-01	1.08E-01	2.08E-01

## Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177516	1/7/2013 - 1/7/2013	I-131	<1.49E-02	0.00E+00	1.49E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177579	1/14/2013 - 1/14/2013	I-131	<1.56E-02	0.00E+00	1.56E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177624	1/21/2013 - 1/21/2013	I-131	<2.54E-02	0.00E+00	2.54E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177658	1/28/2013 - 1/28/2013	I-131	<2.16E-02	0.00E+00	2.16E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177692	2/4/2013 - 2/4/2013	I-131	<1.14E-02	0.00E+00	1.14E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177737	2/11/2013 - 2/11/2013	I-131	<1.35E-02	0.00E+00	1.35E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177775	2/18/2013 - 2/18/2013	I-131	<2.20E-02	0.00E+00	2.20E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177846	2/25/2013 - 2/25/2013	I-131	<1.68E-02	0.00E+00	1.68E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177882	3/4/2013 - 3/4/2013	I-131	<1.70E-02	0.00E+00	1.70E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177931	3/11/2013 - 3/11/2013	I-131	<2.19E-02	0.00E+00	2.19E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177967	3/18/2013 - 3/18/2013	I-131	<1.37E-02	0.00E+00	1.37E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177994	3/24/2013 - 3/24/2013	I-131	<1.95E-02	0.00E+00	1.95E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178028	4/1/2013 - 4/1/2013	I-131	<1.25E-02	0.00E+00	1.25E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178098	4/8/2013 - 4/8/2013	I-131	<1.88E-02	0.00E+00	1.88E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256382	4/8/2013 - 4/15/2013	I-131	<1.60E-02	0.00E+00	1.60E-02
		Cs-134	<8.23E-03	0.00E+00	8.23E-03
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<8.87E-02	0.00E+00	8.87E-02
		K-40	1.70E-01	8.54E-02	2.69E-01
256652	4/15/2013 - 4/22/2013	I-131	<2.09E-02	0.00E+00	2.09E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.50E-02	0.00E+00	1.50E-02
		Be-7	<9.94E-02	0.00E+00	9.94E-02
		K-40	4.99E-01	1.09E-01	2.66E-01
257186	4/22/2013 - 4/29/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<6.36E-03	0.00E+00	6.36E-03
		Cs-137	<6.40E-03	0.00E+00	6.40E-03
		Be-7	<1.07E-01	0.00E+00	1.07E-01
		K-40	2.96E-01	7.39E-02	1.69E-01
257331	4/29/2013 - 5/6/2013	I-131	<1.59E-02	0.00E+00	1.59E-02
		Cs-134	<1.24E-02	0.00E+00	1.24E-02
		Cs-137	<1.61E-02	0.00E+00	1.61E-02
		Be-7	<8.67E-02	0.00E+00	8.67E-02
		K-40	5.33E-01	1.07E-01	1.77E-01
257776	5/6/2013 - 5/13/2013	I-131	<1.71E-02	0.00E+00	1.71E-02
		Cs-134	<1.13E-02	0.00E+00	1.13E-02
		Cs-137	<7.99E-03	0.00E+00	7.99E-03
		Be-7	<1.31E-01	0.00E+00	1.31E-01
		K-40	<4.65E-01	0.00E+00	4.65E-01
258022	5/13/2013 - 5/20/2013	I-131	<8.26E-03	0.00E+00	8.26E-03
		Cs-134	<1.43E-02	0.00E+00	1.43E-02
		Cs-137	<3.00E-03	0.00E+00	3.00E-03
		Be-7	<7.73E-02	0.00E+00	7.73E-02
		K-40	2.66E-01	7.39E-02	2.20E-01
258268	5/20/2013 - 5/26/2013	I-131	<3.03E-02	0.00E+00	3.03E-02
		Cs-134	<1.99E-02	0.00E+00	1.99E-02
		Cs-137	<4.82E-03	0.00E+00	4.82E-03
		Be-7	<1.47E-01	0.00E+00	1.47E-01
		K-40	<6.89E-01	0.00E+00	6.89E-01
258604	5/26/2013 - 6/3/2013	I-131	<2.27E-02	0.00E+00	2.27E-02
		Cs-134	<1.47E-02	0.00E+00	1.47E-02
		Cs-137	<1.48E-02	0.00E+00	1.48E-02
		Be-7	<1.62E-01	0.00E+00	1.62E-01
		K-40	<4.70E-01	0.00E+00	4.70E-01
259078	6/3/2013 - 6/10/2013	I-131	<1.18E-02	0.00E+00	1.18E-02
		Cs-134	<6.67E-03	0.00E+00	6.67E-03
		Cs-137	<8.10E-03	0.00E+00	8.10E-03
		Be-7	<7.73E-02	0.00E+00	7.73E-02
		K-40	3.42E-01	6.46E-02	8.94E-02
259642	6/10/2013 - 6/18/2013	I-131	<1.85E-02	0.00E+00	1.85E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.42E-02	0.00E+00	1.42E-02
		Be-7	<1.35E-01	0.00E+00	1.35E-01
		K-40	2.62E-01	9.32E-02	2.30E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
260274	6/18/2013 - 6/24/2013	I-131	<2.50E-02	0.00E+00	2.50E-02
		Cs-134	<1.49E-02	0.00E+00	1.49E-02
		Cs-137	<1.76E-02	0.00E+00	1.76E-02
		Be-7	<1.44E-01	0.00E+00	1.44E-01
		K-40	5.47E-01	1.17E-01	6.72E-02
260746	7/1/2013 - 7/8/2013	I-131	<9.94E-03	0.00E+00	9.94E-03
		Cs-134	<8.19E-03	0.00E+00	8.19E-03
		Cs-137	<9.13E-03	0.00E+00	9.13E-03
		Be-7	<6.68E-02	0.00E+00	6.68E-02
		K-40	4.14E-01	6.71E-02	7.93E-02
261685	7/8/2013 - 7/15/2013	I-131	<1.44E-02	0.00E+00	1.44E-02
		Cs-134	<6.43E-03	0.00E+00	6.43E-03
		Cs-137	<8.02E-03	0.00E+00	8.02E-03
		Be-7	<5.18E-02	0.00E+00	5.18E-02
		K-40	3.14E-01	7.79E-02	1.66E-01
261952	6/24/2013 - 7/1/2013	I-131	<2.40E-02	0.00E+00	2.40E-02
		Cs-134	<1.45E-02	0.00E+00	1.45E-02
		Cs-137	<1.59E-02	0.00E+00	1.59E-02
		Be-7	<8.49E-02	0.00E+00	8.49E-02
		K-40	<4.98E-01	0.00E+00	4.98E-01
262195	7/15/2013 - 7/22/2013	I-131	<2.08E-02	0.00E+00	2.08E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.67E-02	0.00E+00	1.67E-02
		Be-7	<1.26E-01	0.00E+00	1.26E-01
		K-40	4.56E-01	1.07E-01	6.84E-02
263651	7/29/2013 - 8/5/2013	I-131	<2.13E-02	0.00E+00	2.13E-02
		Cs-134	<1.91E-02	0.00E+00	1.91E-02
		Cs-137	<1.81E-02	0.00E+00	1.81E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	4.60E-01	1.08E-01	2.43E-01
265040	7/22/2013 - 7/29/2013	I-131	<4.42E-02	0.00E+00	4.42E-02
		Cs-134	<2.22E-02	0.00E+00	2.22E-02
		Cs-137	<1.49E-02	0.00E+00	1.49E-02
		Be-7	<1.35E-01	0.00E+00	1.35E-01
		K-40	3.88E-01	1.19E-01	1.82E-01
266658	8/5/2013 - 8/12/2013	I-131	<1.56E-02	0.00E+00	1.56E-02
		Cs-134	<1.27E-02	0.00E+00	1.27E-02
		Cs-137	<1.67E-02	0.00E+00	1.67E-02
		Be-7	<1.38E-01	0.00E+00	1.38E-01
		K-40	5.05E-01	1.13E-01	3.21E-01
267537	8/12/2013 - 8/20/2013	I-131	<8.64E-03	0.00E+00	8.64E-03
		Cs-134	<9.70E-03	0.00E+00	9.70E-03
		Cs-137	<9.49E-03	0.00E+00	9.49E-03
		Be-7	<7.52E-02	0.00E+00	7.52E-02
		K-40	3.42E-01	9.16E-02	1.80E-01
268233	8/20/2013 - 8/26/2013	I-131	<1.69E-02	0.00E+00	1.69E-02
		Cs-134	<1.78E-02	0.00E+00	1.78E-02
		Cs-137	<1.72E-02	0.00E+00	1.72E-02
		Be-7	<1.40E-01	0.00E+00	1.40E-01
		K-40	<5.69E-01	0.00E+00	5.69E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
269704	8/26/2013 - 9/3/2013	I-131	<2.56E-02	0.00E+00	2.56E-02
		Cs-134	<1.28E-02	0.00E+00	1.28E-02
		Cs-137	<1.56E-02	0.00E+00	1.56E-02
		Be-7	<1.04E-01	0.00E+00	1.04E-01
		K-40	<4.93E-01	0.00E+00	4.93E-01
270612	9/3/2013 - 9/9/2013	I-131	<2.52E-02	0.00E+00	2.52E-02
		Cs-134	<1.86E-02	0.00E+00	1.86E-02
		Cs-137	<2.06E-02	0.00E+00	2.06E-02
		Be-7	<1.28E-01	0.00E+00	1.28E-01
		K-40	4.65E-01	1.16E-01	2.78E-01
271332	9/9/2013 - 9/16/2013	I-131	<1.97E-02	0.00E+00	1.97E-02
		Cs-134	<1.76E-02	0.00E+00	1.76E-02
		Cs-137	<2.23E-02	0.00E+00	2.23E-02
		Be-7	<1.25E-01	0.00E+00	1.25E-01
		K-40	4.66E-01	1.07E-01	2.13E-01
271718	9/16/2013 - 9/23/2013	I-131	<1.99E-02	0.00E+00	1.99E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<2.24E-02	0.00E+00	2.24E-02
		Be-7	<1.37E-01	0.00E+00	1.37E-01
		K-40	4.61E-01	1.33E-01	1.96E-01
272357	9/23/2013 - 9/30/2013	I-131	<2.16E-02	0.00E+00	2.16E-02
		Cs-134	<1.44E-02	0.00E+00	1.44E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.31E-01	0.00E+00	1.31E-01
		K-40	5.02E-01	1.12E-01	6.79E-02
272775	9/30/2013 - 10/7/2013	I-131	<1.68E-02	0.00E+00	1.68E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<1.21E-02	0.00E+00	1.21E-02
		Be-7	<1.02E-01	0.00E+00	1.02E-01
		K-40	2.24E-01	1.12E-01	1.90E-01
274001	10/7/2013 - 10/14/2013	I-131	<1.49E-02	0.00E+00	1.49E-02
		Cs-134	<6.51E-03	0.00E+00	6.51E-03
		Cs-137	<6.28E-03	0.00E+00	6.28E-03
		Be-7	<7.42E-02	0.00E+00	7.42E-02
		K-40	4.16E-01	8.77E-02	1.14E-01
274247	10/14/2013 - 10/21/2013	I-131	<1.26E-02	0.00E+00	1.26E-02
		Cs-134	<7.09E-03	0.00E+00	7.09E-03
		Cs-137	<5.41E-03	0.00E+00	5.41E-03
		Be-7	<8.22E-02	0.00E+00	8.22E-02
		K-40	3.53E-01	6.14E-02	1.27E-01
274619	10/21/2013 - 10/28/2013	I-131	<1.02E-02	0.00E+00	1.02E-02
		Cs-134	<1.05E-02	0.00E+00	1.05E-02
		Cs-137	<6.56E-03	0.00E+00	6.56E-03
		Be-7	<8.61E-02	0.00E+00	8.61E-02
		K-40	<3.85E-01	0.00E+00	3.85E-01
275207	10/28/2013 - 11/4/2013	I-131	<2.23E-02	0.00E+00	2.23E-02
		Cs-134	<1.66E-02	0.00E+00	1.66E-02
		Cs-137	<1.69E-02	0.00E+00	1.69E-02
		Be-7	<1.20E-01	0.00E+00	1.20E-01
		K-40	<4.97E-01	0.00E+00	4.97E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277041	11/4/2013 - 11/11/2013	I-131	<2.46E-02	0.00E+00	2.46E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.05E-02	0.00E+00	1.05E-02
		Be-7	<9.59E-02	0.00E+00	9.59E-02
		K-40	3.90E-01	1.27E-01	1.91E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277051	11/18/2013 - 11/25/2013	I-131	<2.65E-02	0.00E+00	2.65E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.09E-02	0.00E+00	1.09E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	2.38E-01	7.18E-02	5.85E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277061	11/11/2013 - 11/18/2013	I-131	<2.12E-02	0.00E+00	2.12E-02
		Cs-134	<1.60E-02	0.00E+00	1.60E-02
		Cs-137	<1.91E-02	0.00E+00	1.91E-02
		Be-7	<1.61E-01	0.00E+00	1.61E-01
		K-40	3.22E-01	1.25E-01	2.36E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
278783	11/25/2013 - 12/2/2013	I-131	<2.18E-02	0.00E+00	2.18E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.78E-02	0.00E+00	1.78E-02
		Be-7	<1.45E-01	0.00E+00	1.45E-01
		K-40	<4.59E-01	0.00E+00	4.59E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
278854	12/2/2013 - 12/9/2013	I-131	<2.64E-02	0.00E+00	2.64E-02
		Cs-134	<2.08E-02	0.00E+00	2.08E-02
		Cs-137	<1.97E-02	0.00E+00	1.97E-02
		Be-7	<1.14E-01	0.00E+00	1.14E-01
		K-40	6.12E-01	1.49E-01	2.90E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279094	12/9/2013 - 12/16/2013	I-131	<2.05E-02	0.00E+00	2.05E-02
		Cs-134	<1.91E-02	0.00E+00	1.91E-02
		Cs-137	<2.12E-02	0.00E+00	2.12E-02
		Be-7	<1.59E-01	0.00E+00	1.59E-01
		K-40	<4.64E-01	0.00E+00	4.64E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279722	12/16/2013 - 12/23/2013	I-131	<2.13E-02	0.00E+00	2.13E-02
		Cs-134	<7.85E-03	0.00E+00	7.85E-03
		Cs-137	<9.44E-03	0.00E+00	9.44E-03
		Be-7	<8.80E-02	0.00E+00	8.80E-02
		K-40	5.88E-01	8.48E-02	3.31E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
280211	12/23/2013 - 12/30/2013	I-131	<4.71E-02	0.00E+00	4.71E-02
		Cs-134	<1.72E-02	0.00E+00	1.72E-02
		Cs-137	<1.60E-02	0.00E+00	1.60E-02
		Be-7	<1.61E-01	0.00E+00	1.61E-01
		K-40	<5.83E-01	0.00E+00	5.83E-01

## Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177517	1/7/2013 - 1/7/2013	I-131	<1.28E-02	0.00E+00	1.28E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177580	1/14/2013 - 1/14/2013	I-131	<1.62E-02	0.00E+00	1.62E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177625	1/21/2013 - 1/21/2013	I-131	<1.59E-02	0.00E+00	1.59E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177659	1/28/2013 - 1/28/2013	I-131	<1.22E-02	0.00E+00	1.22E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177693	2/4/2013 - 2/4/2013	I-131	<1.85E-02	0.00E+00	1.85E-02
177738	2/11/2013 - 2/11/2013	I-131	<1.16E-02	0.00E+00	1.16E-02
177776	2/18/2013 - 2/18/2013	I-131	<1.74E-02	0.00E+00	1.74E-02
177847	2/25/2013 - 2/25/2013	I-131	<1.70E-02	0.00E+00	1.70E-02
177883	3/4/2013 - 3/4/2013	I-131	<1.90E-02	0.00E+00	1.90E-02
177932	3/11/2013 - 3/11/2013	I-131	<2.23E-02	0.00E+00	2.23E-02
177968	3/18/2013 - 3/18/2013	I-131	<2.19E-02	0.00E+00	2.19E-02
177995	3/24/2013 - 3/24/2013	I-131	<1.24E-02	0.00E+00	1.24E-02
178029	4/1/2013 - 4/1/2013	I-131	<1.41E-02	0.00E+00	1.41E-02
178099	4/8/2013 - 4/8/2013	I-131	<1.20E-02	0.00E+00	1.20E-02
256385	4/8/2013 - 4/15/2013	I-131	<1.76E-02	0.00E+00	1.76E-02
		Cs-134	<9.23E-03	0.00E+00	9.23E-03
		Cs-137	<1.30E-02	0.00E+00	1.30E-02
		Be-7	<1.14E-01	0.00E+00	1.14E-01
		K-40	5.76E-01	1.03E-01	5.02E-02
256655	4/15/2013 - 4/22/2013	I-131	<2.30E-02	0.00E+00	2.30E-02
		Cs-134	<1.69E-02	0.00E+00	1.69E-02
		Cs-137	<1.82E-02	0.00E+00	1.82E-02
		Be-7	<1.04E-01	0.00E+00	1.04E-01
		K-40	<4.22E-01	0.00E+00	4.22E-01
257189	4/22/2013 - 4/29/2013	I-131	<1.98E-02	0.00E+00	1.98E-02
		Cs-134	<1.10E-02	0.00E+00	1.10E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	6.90E-01	1.24E-01	6.02E-02
257334	4/29/2013 - 5/6/2013	I-131	<1.28E-02	0.00E+00	1.28E-02
		Cs-134	<7.00E-03	0.00E+00	7.00E-03
		Cs-137	<1.20E-02	0.00E+00	1.20E-02
		Be-7	<6.59E-02	0.00E+00	6.59E-02
		K-40	2.60E-01	5.80E-02	1.37E-01
257779	5/6/2013 - 5/13/2013	I-131	<1.43E-02	0.00E+00	1.43E-02
		Cs-134	<1.00E-02	0.00E+00	1.00E-02
		Cs-137	<9.24E-03	0.00E+00	9.24E-03
		Be-7	<6.45E-02	0.00E+00	6.45E-02
		K-40	4.82E-01	9.53E-02	1.93E-01
258025	5/13/2013 - 5/20/2013	I-131	<1.47E-02	0.00E+00	1.47E-02
		Cs-134	<6.74E-03	0.00E+00	6.74E-03
		Cs-137	<9.51E-03	0.00E+00	9.51E-03
		Be-7	<6.73E-02	0.00E+00	6.73E-02
		K-40	4.83E-01	7.46E-02	1.05E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258271	5/20/2013 - 5/26/2013	I-131	<3.74E-02	0.00E+00	3.74E-02
		Cs-134	<1.93E-02	0.00E+00	1.93E-02
		Cs-137	<2.61E-02	0.00E+00	2.61E-02
		Be-7	<1.73E-01	0.00E+00	1.73E-01
		K-40	7.94E-01	1.56E-01	2.20E-01
258607	5/26/2013 - 6/3/2013	I-131	<2.58E-02	0.00E+00	2.58E-02
		Cs-134	<1.14E-02	0.00E+00	1.14E-02
		Cs-137	<1.61E-02	0.00E+00	1.61E-02
		Be-7	<1.15E-01	0.00E+00	1.15E-01
		K-40	2.01E-01	9.69E-02	2.17E-01
259081	6/3/2013 - 6/10/2013	I-131	<1.82E-02	0.00E+00	1.82E-02
		Cs-134	<1.31E-02	0.00E+00	1.31E-02
		Cs-137	<2.07E-02	0.00E+00	2.07E-02
		Be-7	<9.27E-02	0.00E+00	9.27E-02
		K-40	3.15E-01	1.01E-01	2.06E-01
259646	6/10/2013 - 6/18/2013	I-131	<1.99E-02	0.00E+00	1.99E-02
		Cs-134	<1.42E-02	0.00E+00	1.42E-02
		Cs-137	<1.38E-02	0.00E+00	1.38E-02
		Be-7	<1.37E-01	0.00E+00	1.37E-01
		K-40	2.46E-01	9.88E-02	6.28E-02
260277	6/18/2013 - 6/24/2013	I-131	<1.35E-02	0.00E+00	1.35E-02
		Cs-134	<1.23E-02	0.00E+00	1.23E-02
		Cs-137	<1.60E-02	0.00E+00	1.60E-02
		Be-7	<8.29E-02	0.00E+00	8.29E-02
		K-40	<3.75E-01	0.00E+00	3.75E-01
260749	7/1/2013 - 7/8/2013	I-131	<1.01E-02	0.00E+00	1.01E-02
		Cs-134	<7.23E-03	0.00E+00	7.23E-03
		Cs-137	<1.20E-02	0.00E+00	1.20E-02
		Be-7	<6.93E-02	0.00E+00	6.93E-02
		K-40	2.52E-01	7.72E-02	1.81E-01
261688	7/8/2013 - 7/15/2013	I-131	<2.97E-03	0.00E+00	2.97E-03
		Cs-134	<1.13E-02	0.00E+00	1.13E-02
		Cs-137	<1.17E-02	0.00E+00	1.17E-02
		Be-7	<5.08E-02	0.00E+00	5.08E-02
		K-40	3.93E-01	9.01E-02	1.71E-01
261955	6/24/2013 - 7/1/2013	I-131	<2.16E-02	0.00E+00	2.16E-02
		Cs-134	<1.81E-02	0.00E+00	1.81E-02
		Cs-137	<2.10E-02	0.00E+00	2.10E-02
		Be-7	<1.35E-01	0.00E+00	1.35E-01
		K-40	<5.76E-01	0.00E+00	5.76E-01
262198	7/15/2013 - 7/22/2013	I-131	<1.98E-02	0.00E+00	1.98E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.81E-02	0.00E+00	1.81E-02
		Be-7	<1.14E-01	0.00E+00	1.14E-01
		K-40	5.05E-01	1.13E-01	6.83E-02
263654	7/29/2013 - 8/5/2013	I-131	<2.12E-02	0.00E+00	2.12E-02
		Cs-134	<1.69E-02	0.00E+00	1.69E-02
		Cs-137	<1.70E-02	0.00E+00	1.70E-02
		Be-7	<1.42E-01	0.00E+00	1.42E-01
		K-40	4.11E-01	1.03E-01	2.44E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.

# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
265041	7/22/2013 - 7/29/2013	I-131	<3.94E-02	0.00E+00	3.94E-02
		Cs-134	<1.50E-02	0.00E+00	1.50E-02
		Cs-137	<2.17E-02	0.00E+00	2.17E-02
		Be-7	<1.53E-01	0.00E+00	1.53E-01
		K-40	3.75E-01	1.00E-01	7.23E-02
266661	8/5/2013 - 8/12/2013	I-131	<1.41E-02	0.00E+00	1.41E-02
		Cs-134	<2.06E-02	0.00E+00	2.06E-02
		Cs-137	<2.41E-02	0.00E+00	2.41E-02
		Be-7	<1.33E-01	0.00E+00	1.33E-01
		K-40	4.75E-01	1.73E-01	3.47E-01
267538	8/12/2013 - 8/20/2013	I-131	<1.26E-02	0.00E+00	1.26E-02
		Cs-134	<5.81E-03	0.00E+00	5.81E-03
		Cs-137	<1.22E-02	0.00E+00	1.22E-02
		Be-7	<8.04E-02	0.00E+00	8.04E-02
		K-40	3.63E-01	7.93E-02	1.88E-01
268236	8/20/2013 - 8/26/2013	I-131	<2.92E-02	0.00E+00	2.92E-02
		Cs-134	<1.33E-02	0.00E+00	1.33E-02
		Cs-137	<2.22E-02	0.00E+00	2.22E-02
		Be-7	<1.45E-01	0.00E+00	1.45E-01
		K-40	<5.77E-01	0.00E+00	5.77E-01
269707	8/26/2013 - 9/3/2013	I-131	<3.28E-02	0.00E+00	3.28E-02
		Cs-134	<1.26E-02	0.00E+00	1.26E-02
		Cs-137	<1.49E-02	0.00E+00	1.49E-02
		Be-7	<1.34E-01	0.00E+00	1.34E-01
		K-40	2.04E-01	9.52E-02	1.98E-01
270615	9/3/2013 - 9/9/2013	I-131	<2.39E-02	0.00E+00	2.39E-02
		Cs-134	<1.79E-02	0.00E+00	1.79E-02
		Cs-137	<1.86E-02	0.00E+00	1.86E-02
		Be-7	<1.14E-01	0.00E+00	1.14E-01
		K-40	4.09E-01	1.14E-01	3.01E-01
271333	9/9/2013 - 9/16/2013	I-131	<3.10E-02	0.00E+00	3.10E-02
		Cs-134	<1.80E-02	0.00E+00	1.80E-02
		Cs-137	<1.54E-02	0.00E+00	1.54E-02
		Be-7	<1.41E-01	0.00E+00	1.41E-01
		K-40	4.15E-01	1.04E-01	7.02E-02
271721	9/16/2013 - 9/23/2013	I-131	<1.90E-02	0.00E+00	1.90E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.71E-02	0.00E+00	1.71E-02
		Be-7	<9.21E-02	0.00E+00	9.21E-02
		K-40	<5.57E-01	0.00E+00	5.57E-01
272360	9/23/2013 - 9/30/2013	I-131	<2.11E-02	0.00E+00	2.11E-02
		Cs-134	<1.40E-02	0.00E+00	1.40E-02
		Cs-137	<1.74E-02	0.00E+00	1.74E-02
		Be-7	<1.55E-01	0.00E+00	1.55E-01
		K-40	5.53E-01	1.21E-01	7.12E-02
272776	9/30/2013 - 10/7/2013	I-131	<3.35E-02	0.00E+00	3.35E-02
		Cs-134	<1.72E-02	0.00E+00	1.72E-02
		Cs-137	<1.83E-02	0.00E+00	1.83E-02
		Be-7	<1.59E-01	0.00E+00	1.59E-01
		K-40	5.03E-01	1.48E-01	2.53E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
274004	10/7/2013 - 10/14/2013	I-131	<2.12E-02	0.00E+00	2.12E-02
		Cs-134	<9.68E-03	0.00E+00	9.68E-03
		Cs-137	<1.35E-02	0.00E+00	1.35E-02
		Be-7	<8.24E-02	0.00E+00	8.24E-02
		K-40	<3.46E-01	0.00E+00	3.46E-01
274250	10/14/2013 - 10/21/2013	I-131	<1.80E-02	0.00E+00	1.80E-02
		Cs-134	<1.07E-02	0.00E+00	1.07E-02
		Cs-137	<1.09E-02	0.00E+00	1.09E-02
		Be-7	<8.01E-02	0.00E+00	8.01E-02
		K-40	4.23E-01	8.81E-02	1.36E-01
274623	10/21/2013 - 10/28/2013	I-131	<1.17E-02	0.00E+00	1.17E-02
		Cs-134	<8.70E-03	0.00E+00	8.70E-03
		Cs-137	<1.22E-02	0.00E+00	1.22E-02
		Be-7	<9.40E-02	0.00E+00	9.40E-02
		K-40	5.37E-01	8.09E-02	3.30E-02
275210	10/28/2013 - 11/4/2013	I-131	<2.53E-02	0.00E+00	2.53E-02
		Cs-134	<1.62E-02	0.00E+00	1.62E-02
		Cs-137	<2.15E-02	0.00E+00	2.15E-02
		Be-7	<1.49E-01	0.00E+00	1.49E-01
		K-40	<5.84E-01	0.00E+00	5.84E-01
277044	11/4/2013 - 11/11/2013	I-131	<1.55E-02	0.00E+00	1.55E-02
		Cs-134	<1.78E-02	0.00E+00	1.78E-02
		Cs-137	<2.24E-02	0.00E+00	2.24E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
		K-40	4.79E-01	1.13E-01	2.01E-01
277054	11/18/2013 - 11/25/2013	I-131	<2.41E-02	0.00E+00	2.41E-02
		Cs-134	<1.43E-02	0.00E+00	1.43E-02
		Cs-137	<1.52E-02	0.00E+00	1.52E-02
		Be-7	<1.25E-01	0.00E+00	1.25E-01
		K-40	2.57E-01	1.05E-01	1.81E-01
277064	11/11/2013 - 11/18/2013	I-131	<1.09E-02	0.00E+00	1.09E-02
		Cs-134	<4.45E-03	0.00E+00	4.45E-03
		Cs-137	<1.07E-02	0.00E+00	1.07E-02
		Be-7	<8.63E-02	0.00E+00	8.63E-02
		K-40	2.89E-01	7.72E-02	5.58E-02
278786	11/25/2013 - 12/2/2013	I-131	<4.64E-02	0.00E+00	4.64E-02
		Cs-134	<1.15E-02	0.00E+00	1.15E-02
		Cs-137	<1.58E-02	0.00E+00	1.58E-02
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	<5.53E-01	0.00E+00	5.53E-01
278857	12/2/2013 - 12/9/2013	I-131	<1.40E-02	0.00E+00	1.40E-02
		Cs-134	<9.46E-03	0.00E+00	9.46E-03
		Cs-137	<1.28E-02	0.00E+00	1.28E-02
		Be-7	<8.01E-02	0.00E+00	8.01E-02
		K-40	3.28E-01	8.21E-02	5.55E-02
279097	12/9/2013 - 12/16/2013	I-131	<2.69E-02	0.00E+00	2.69E-02
		Cs-134	<1.66E-02	0.00E+00	1.66E-02
		Cs-137	<2.22E-02	0.00E+00	2.22E-02
		Be-7	<1.65E-01	0.00E+00	1.65E-01
		K-40	<4.94E-01	0.00E+00	4.94E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279725	12/16/2013 - 12/23/2013	I-131	<2.76E-02	0.00E+00	2.76E-02
		Cs-134	<4.70E-03	0.00E+00	4.70E-03
		Cs-137	<8.22E-03	0.00E+00	8.22E-03
		Be-7	<7.55E-02	0.00E+00	7.55E-02
		K-40	3.31E-01	8.28E-02	1.54E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
280214	12/23/2013 - 12/30/2013	I-131	<1.75E-02	0.00E+00	1.75E-02
		Cs-134	<7.55E-03	0.00E+00	7.55E-03
		Cs-137	<1.22E-02	0.00E+00	1.22E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	<3.56E-01	0.00E+00	3.56E-01

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177518	1/7/2013 - 1/7/2013	I-131	<2.36E-02	0.00E+00	2.36E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177581	1/14/2013 - 1/14/2013	I-131	<1.20E-02	0.00E+00	1.20E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177626	1/21/2013 - 1/21/2013	I-131	<1.77E-02	0.00E+00	1.77E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177660	1/28/2013 - 1/28/2013	I-131	<1.95E-02	0.00E+00	1.95E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177694	2/4/2013 - 2/4/2013	I-131	<1.88E-02	0.00E+00	1.88E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177739	2/11/2013 - 2/11/2013	I-131	<1.88E-02	0.00E+00	1.88E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177777	2/18/2013 - 2/18/2013	I-131	<1.82E-02	0.00E+00	1.82E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177848	2/25/2013 - 2/25/2013	I-131	<1.75E-02	0.00E+00	1.75E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177884	3/4/2013 - 3/4/2013	I-131	<1.76E-02	0.00E+00	1.76E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177933	3/11/2013 - 3/11/2013	I-131	<1.78E-02	0.00E+00	1.78E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177969	3/18/2013 - 3/18/2013	I-131	<2.17E-02	0.00E+00	2.17E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177996	3/24/2013 - 3/24/2013	I-131	<1.84E-02	0.00E+00	1.84E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178030	4/1/2013 - 4/1/2013	I-131	<1.20E-02	0.00E+00	1.20E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178100	4/8/2013 - 4/8/2013	I-131	<1.52E-02	0.00E+00	1.52E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256293	4/8/2013 - 4/15/2013	I-131	<1.30E-02	0.00E+00	1.30E-02
		Cs-134	<9.42E-03	0.00E+00	9.42E-03
		Cs-137	<1.11E-02	0.00E+00	1.11E-02
		Be-7	<6.05E-02	0.00E+00	6.05E-02
		K-40	3.91E-01	7.02E-02	9.26E-02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
256651	4/15/2013 - 4/22/2013	I-131	<1.95E-02	0.00E+00	1.95E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<1.46E-01	0.00E+00	1.46E-01
		K-40	5.37E-01	1.12E-01	1.70E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257185	4/22/2013 - 4/29/2013	I-131	<1.88E-02	0.00E+00	1.88E-02
		Cs-134	<1.01E-02	0.00E+00	1.01E-02
		Cs-137	<9.64E-03	0.00E+00	9.64E-03
		Be-7	<9.14E-02	0.00E+00	9.14E-02
		K-40	<2.84E-01	0.00E+00	2.84E-01
257330	4/29/2013 - 5/6/2013	I-131	<1.14E-02	0.00E+00	1.14E-02
		Cs-134	<9.33E-03	0.00E+00	9.33E-03
		Cs-137	<8.23E-03	0.00E+00	8.23E-03
		Be-7	<7.81E-02	0.00E+00	7.81E-02
		K-40	5.26E-01	9.03E-02	8.56E-02
257775	5/6/2013 - 5/13/2013	I-131	<2.06E-02	0.00E+00	2.06E-02
		Cs-134	<1.30E-02	0.00E+00	1.30E-02
		Cs-137	<1.68E-02	0.00E+00	1.68E-02
		Be-7	<8.37E-02	0.00E+00	8.37E-02
		K-40	<4.43E-01	0.00E+00	4.43E-01
258021	5/13/2013 - 5/20/2013	I-131	<1.36E-02	0.00E+00	1.36E-02
		Cs-134	<1.02E-02	0.00E+00	1.02E-02
		Cs-137	<9.37E-03	0.00E+00	9.37E-03
		Be-7	<8.28E-02	0.00E+00	8.28E-02
		K-40	<3.45E-01	0.00E+00	3.45E-01
258267	5/20/2013 - 5/26/2013	I-131	<3.37E-02	0.00E+00	3.37E-02
		Cs-134	<1.68E-02	0.00E+00	1.68E-02
		Cs-137	<2.04E-02	0.00E+00	2.04E-02
		Be-7	<1.63E-01	0.00E+00	1.63E-01
		K-40	5.26E-01	1.28E-01	8.36E-02
258603	5/26/2013 - 6/3/2013	I-131	<2.19E-02	0.00E+00	2.19E-02
		Cs-134	<1.23E-02	0.00E+00	1.23E-02
		Cs-137	<1.62E-02	0.00E+00	1.62E-02
		Be-7	<1.42E-01	0.00E+00	1.42E-01
		K-40	<5.26E-01	0.00E+00	5.26E-01
259077	6/3/2013 - 6/10/2013	I-131	<2.35E-02	0.00E+00	2.35E-02
		Cs-134	<1.16E-02	0.00E+00	1.16E-02
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<1.20E-01	0.00E+00	1.20E-01
		K-40	3.32E-01	6.64E-02	1.55E-01
259641	6/10/2013 - 6/18/2013	I-131	<1.69E-02	0.00E+00	1.69E-02
		Cs-134	<1.34E-02	0.00E+00	1.34E-02
		Cs-137	<9.95E-03	0.00E+00	9.95E-03
		Be-7	<1.18E-01	0.00E+00	1.18E-01
		K-40	3.46E-01	8.94E-02	2.09E-01
260273	6/18/2013 - 6/24/2013	I-131	<1.25E-02	0.00E+00	1.25E-02
		Cs-134	<5.38E-03	0.00E+00	5.38E-03
		Cs-137	<7.03E-03	0.00E+00	7.03E-03
		Be-7	<5.18E-02	0.00E+00	5.18E-02
		K-40	4.43E-01	4.66E-02	6.78E-02
260745	7/1/2013 - 7/8/2013	I-131	<1.75E-02	0.00E+00	1.75E-02
		Cs-134	<1.17E-02	0.00E+00	1.17E-02
		Cs-137	<1.19E-02	0.00E+00	1.19E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	6.27E-01	1.19E-01	1.61E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
261684	7/8/2013 - 7/15/2013	I-131	<1.36E-02	0.00E+00	1.36E-02
		Cs-134	<7.67E-03	0.00E+00	7.67E-03
		Cs-137	<1.09E-02	0.00E+00	1.09E-02
		Be-7	<9.00E-02	0.00E+00	9.00E-02
		K-40	5.73E-01	8.36E-02	1.11E-01
261951	6/24/2013 - 7/1/2013	I-131	<2.42E-02	0.00E+00	2.42E-02
		Cs-134	<1.73E-02	0.00E+00	1.73E-02
		Cs-137	<1.60E-02	0.00E+00	1.60E-02
		Be-7	<1.40E-01	0.00E+00	1.40E-01
		K-40	<4.98E-01	0.00E+00	4.98E-01
262194	7/15/2013 - 7/22/2013	I-131	<2.78E-02	0.00E+00	2.78E-02
		Cs-134	<1.88E-02	0.00E+00	1.88E-02
		Cs-137	<2.08E-02	0.00E+00	2.08E-02
		Be-7	<1.43E-01	0.00E+00	1.43E-01
		K-40	4.19E-01	1.32E-01	2.02E-01
263650	7/29/2013 - 8/5/2013	I-131	<2.58E-02	0.00E+00	2.58E-02
		Cs-134	<2.07E-02	0.00E+00	2.07E-02
		Cs-137	<2.51E-02	0.00E+00	2.51E-02
		Be-7	<1.23E-01	0.00E+00	1.23E-01
		K-40	<3.89E-01	0.00E+00	3.89E-01
265042	7/22/2013 - 7/29/2013	I-131	<3.02E-02	0.00E+00	3.02E-02
		Cs-134	<1.84E-02	0.00E+00	1.84E-02
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<1.63E-01	0.00E+00	1.63E-01
		K-40	4.39E-01	1.46E-01	2.73E-01
266657	8/5/2013 - 8/12/2013	I-131	<2.68E-02	0.00E+00	2.68E-02
		Cs-134	<1.88E-02	0.00E+00	1.88E-02
		Cs-137	<2.02E-02	0.00E+00	2.02E-02
		Be-7	<1.11E-01	0.00E+00	1.11E-01
		K-40	2.14E-01	1.08E-01	2.30E-01
267539	8/12/2013 - 8/20/2013	I-131	<2.13E-02	0.00E+00	2.13E-02
		Cs-134	<1.12E-02	0.00E+00	1.12E-02
		Cs-137	<1.77E-02	0.00E+00	1.77E-02
		Be-7	<1.26E-01	0.00E+00	1.26E-01
		K-40	4.88E-01	1.06E-01	6.28E-02
268232	8/20/2013 - 8/26/2013	I-131	<2.82E-02	0.00E+00	2.82E-02
		Cs-134	<2.08E-02	0.00E+00	2.08E-02
		Cs-137	<2.94E-02	0.00E+00	2.94E-02
		Be-7	<1.48E-01	0.00E+00	1.48E-01
		K-40	<6.34E-01	0.00E+00	6.34E-01
269703	8/26/2013 - 9/3/2013	I-131	<1.50E-02	0.00E+00	1.50E-02
		Cs-134	<7.09E-03	0.00E+00	7.09E-03
		Cs-137	<8.89E-03	0.00E+00	8.89E-03
		Be-7	<8.66E-02	0.00E+00	8.66E-02
		K-40	<3.01E-01	0.00E+00	3.01E-01
270611	9/3/2013 - 9/9/2013	I-131	<3.43E-02	0.00E+00	3.43E-02
		Cs-134	<1.96E-02	0.00E+00	1.96E-02
		Cs-137	<2.08E-02	0.00E+00	2.08E-02
		Be-7	<1.64E-01	0.00E+00	1.64E-01
		K-40	7.88E-01	1.58E-01	2.38E-01

(1) Analysis results generated by Harns Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271334	9/9/2013 - 9/16/2013	I-131	<2.35E-02	0.00E+00	2.35E-02
		Cs-134	<1.65E-02	0.00E+00	1.65E-02
		Cs-137	<1.32E-02	0.00E+00	1.32E-02
		Be-7	<1.26E-01	0.00E+00	1.26E-01
		K-40	4.79E-01	1.42E-01	2.89E-01
271717	9/16/2013 - 9/23/2013	I-131	<1.37E-02	0.00E+00	1.37E-02
		Cs-134	<1.61E-02	0.00E+00	1.61E-02
		Cs-137	<1.94E-02	0.00E+00	1.94E-02
		Be-7	<1.59E-01	0.00E+00	1.59E-01
		K-40	5.45E-01	1.22E-01	2.61E-01
272356	9/23/2013 - 9/30/2013	I-131	<2.30E-02	0.00E+00	2.30E-02
		Cs-134	<1.74E-02	0.00E+00	1.74E-02
		Cs-137	<2.07E-02	0.00E+00	2.07E-02
		Be-7	<1.83E-01	0.00E+00	1.83E-01
		K-40	5.81E-01	1.44E-01	2.97E-01
272777	9/30/2013 - 10/7/2013	I-131	<2.62E-02	0.00E+00	2.62E-02
		Cs-134	<2.01E-02	0.00E+00	2.01E-02
		Cs-137	<1.73E-02	0.00E+00	1.73E-02
		Be-7	<1.32E-01	0.00E+00	1.32E-01
		K-40	<5.30E-01	0.00E+00	5.30E-01
274000	10/7/2013 - 10/14/2013	I-131	<3.17E-02	0.00E+00	3.17E-02
		Cs-134	<9.52E-03	0.00E+00	9.52E-03
		Cs-137	<8.98E-03	0.00E+00	8.98E-03
		Be-7	<1.10E-01	0.00E+00	1.10E-01
		K-40	3.58E-01	8.95E-02	6.05E-02
274246	10/14/2013 - 10/21/2013	I-131	<1.44E-02	0.00E+00	1.44E-02
		Cs-134	<6.71E-03	0.00E+00	6.71E-03
		Cs-137	<7.28E-03	0.00E+00	7.28E-03
		Be-7	<4.29E-02	0.00E+00	4.29E-02
		K-40	2.56E-01	5.72E-02	3.45E-02
274618	10/21/2013 - 10/28/2013	I-131	<1.36E-02	0.00E+00	1.36E-02
		Cs-134	<8.42E-03	0.00E+00	8.42E-03
		Cs-137	<8.62E-03	0.00E+00	8.62E-03
		Be-7	<4.55E-02	0.00E+00	4.55E-02
		K-40	4.57E-01	9.65E-02	1.37E-01
275206	10/28/2013 - 11/4/2013	I-131	<1.88E-02	0.00E+00	1.88E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.63E-02	0.00E+00	1.63E-02
		Be-7	<1.66E-01	0.00E+00	1.66E-01
		K-40	4.77E-01	1.39E-01	2.84E-01
277040	11/4/2013 - 11/11/2013	I-131	<2.87E-02	0.00E+00	2.87E-02
		Cs-134	<1.70E-02	0.00E+00	1.70E-02
		Cs-137	<1.78E-02	0.00E+00	1.78E-02
		Be-7	<1.54E-01	0.00E+00	1.54E-01
		K-40	2.94E-01	8.88E-02	7.23E-02
277050	11/18/2013 - 11/25/2013	I-131	<2.33E-02	0.00E+00	2.33E-02
		Cs-134	<8.75E-03	0.00E+00	8.75E-03
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<8.17E-02	0.00E+00	8.17E-02
		K-40	3.89E-01	9.22E-02	1.59E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277060	11/11/2013 - 11/18/2013	I-131	<1.65E-02	0.00E+00	1.65E-02
		Cs-134	<9.86E-03	0.00E+00	9.86E-03
		Cs-137	<1.44E-02	0.00E+00	1.44E-02
		Be-7	<1.02E-01	0.00E+00	1.02E-01
		K-40	6.52E-01	1.23E-01	2.59E-01
278782	11/25/2013 - 12/2/2013	I-131	<6.85E-02	0.00E+00	6.85E-02
		Cs-134	<1.61E-02	0.00E+00	1.61E-02
		Cs-137	<1.89E-02	0.00E+00	1.89E-02
		Be-7	<1.39E-01	0.00E+00	1.39E-01
		K-40	4.23E-01	9.97E-02	6.35E-02
278853	12/2/2013 - 12/9/2013	I-131	<1.24E-02	0.00E+00	1.24E-02
		Cs-134	<1.11E-02	0.00E+00	1.11E-02
		Cs-137	<1.12E-02	0.00E+00	1.12E-02
		Be-7	<7.99E-02	0.00E+00	7.99E-02
		K-40	3.21E-01	1.00E-01	1.71E-01
279093	12/9/2013 - 12/16/2013	I-131	<2.50E-02	0.00E+00	2.50E-02
		Cs-134	<9.38E-03	0.00E+00	9.38E-03
		Cs-137	<2.11E-02	0.00E+00	2.11E-02
		Be-7	<1.30E-01	0.00E+00	1.30E-01
		K-40	4.65E-01	1.13E-01	2.48E-01
279721	12/16/2013 - 12/23/2013	I-131	<2.59E-02	0.00E+00	2.59E-02
		Cs-134	<8.23E-03	0.00E+00	8.23E-03
		Cs-137	<1.13E-02	0.00E+00	1.13E-02
		Be-7	<1.04E-01	0.00E+00	1.04E-01
		K-40	3.71E-01	8.50E-02	2.15E-01
280210	12/23/2013 - 12/30/2013	I-131	<3.85E-02	0.00E+00	3.85E-02
		Cs-134	<1.55E-02	0.00E+00	1.55E-02
		Cs-137	<1.41E-02	0.00E+00	1.41E-02
		Be-7	<1.75E-01	0.00E+00	1.75E-01
		K-40	4.68E-01	1.14E-01	7.44E-02
<b>Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]</b>					
177519	1/7/2013 - 1/7/2013	I-131	<2.03E-02	0.00E+00	2.03E-02
177582	1/14/2013 - 1/14/2013	I-131	<1.74E-02	0.00E+00	1.74E-02
177627	1/21/2013 - 1/21/2013	I-131	<2.07E-02	0.00E+00	2.07E-02
177661	1/28/2013 - 1/28/2013	I-131	<1.56E-02	0.00E+00	1.56E-02
177695	2/4/2013 - 2/4/2013	I-131	<1.98E-02	0.00E+00	1.98E-02
177740	2/11/2013 - 2/11/2013	I-131	<1.46E-02	0.00E+00	1.46E-02
177778	2/18/2013 - 2/18/2013	I-131	<1.80E-02	0.00E+00	1.80E-02
177849	2/25/2013 - 2/25/2013	I-131	<1.77E-02	0.00E+00	1.77E-02
177885	3/4/2013 - 3/4/2013	I-131	<1.91E-02	0.00E+00	1.91E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.

# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177934	3/11/2013 - 3/11/2013	I-131	<1.13E-02	0.00E+00	1.13E-02
177970	3/18/2013 - 3/18/2013	I-131	<2.37E-02	0.00E+00	2.37E-02
177997	3/24/2013 - 3/24/2013	I-131	<2.22E-02	0.00E+00	2.22E-02
178031	4/1/2013 - 4/1/2013	I-131	<1.19E-02	0.00E+00	1.19E-02
178101	4/8/2013 - 4/8/2013	I-131	<1.49E-02	0.00E+00	1.49E-02
256295	4/8/2013 - 4/15/2013	I-131	<1.06E-02	0.00E+00	1.06E-02
		Cs-134	<8.09E-03	0.00E+00	8.09E-03
		Cs-137	<9.00E-03	0.00E+00	9.00E-03
		Be-7	<6.91E-02	0.00E+00	6.91E-02
		K-40	2.51E-01	5.48E-02	3.23E-02
256653	4/15/2013 - 4/22/2013	I-131	<1.89E-02	0.00E+00	1.89E-02
		Cs-134	<1.43E-02	0.00E+00	1.43E-02
		Cs-137	<1.48E-02	0.00E+00	1.48E-02
		Be-7	<7.78E-02	0.00E+00	7.78E-02
		K-40	<4.38E-01	0.00E+00	4.38E-01
257187	4/22/2013 - 4/29/2013	I-131	<1.45E-02	0.00E+00	1.45E-02
		Cs-134	<8.61E-03	0.00E+00	8.61E-03
		Cs-137	<1.08E-02	0.00E+00	1.08E-02
		Be-7	<8.80E-02	0.00E+00	8.80E-02
		K-40	2.98E-01	6.21E-02	1.12E-01
257332	4/29/2013 - 5/6/2013	I-131	<1.65E-02	0.00E+00	1.65E-02
		Cs-134	<8.54E-03	0.00E+00	8.54E-03
		Cs-137	<1.38E-02	0.00E+00	1.38E-02
		Be-7	<5.44E-02	0.00E+00	5.44E-02
		K-40	5.44E-01	9.43E-02	1.13E-01
257777	5/6/2013 - 5/13/2013	I-131	<1.48E-02	0.00E+00	1.48E-02
		Cs-134	<8.67E-03	0.00E+00	8.67E-03
		Cs-137	<7.54E-03	0.00E+00	7.54E-03
		Be-7	<4.91E-02	0.00E+00	4.91E-02
		K-40	6.02E-01	8.19E-02	8.14E-02
258023	5/13/2013 - 5/20/2013	I-131	<1.85E-02	0.00E+00	1.85E-02
		Cs-134	<8.65E-03	0.00E+00	8.65E-03
		Cs-137	<1.13E-02	0.00E+00	1.13E-02
		Be-7	<8.87E-02	0.00E+00	8.87E-02
		K-40	1.26E-01	6.89E-02	1.13E-01
258269	5/20/2013 - 5/26/2013	I-131	<3.17E-02	0.00E+00	3.17E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.79E-02	0.00E+00	1.79E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	2.34E-01	1.25E-01	3.17E-01
258605	5/26/2013 - 6/3/2013	I-131	<2.74E-02	0.00E+00	2.74E-02
		Cs-134	<9.48E-03	0.00E+00	9.48E-03
		Cs-137	<1.41E-02	0.00E+00	1.41E-02
		Be-7	<1.06E-01	0.00E+00	1.06E-01
		K-40	<4.22E-01	0.00E+00	4.22E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.

# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259079	6/3/2013 - 6/10/2013	I-131	<7.73E-03	0.00E+00	7.73E-03
		Cs-134	<1.01E-02	0.00E+00	1.01E-02
		Cs-137	<9.66E-03	0.00E+00	9.66E-03
		Be-7	<6.66E-02	0.00E+00	6.66E-02
		K-40	3.59E-01	8.24E-02	5.11E-02
259643	6/10/2013 - 6/18/2013	I-131	<1.75E-02	0.00E+00	1.75E-02
		Cs-134	<8.59E-03	0.00E+00	8.59E-03
		Cs-137	<2.01E-02	0.00E+00	2.01E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	2.94E-01	8.14E-02	1.62E-01
260275	6/18/2013 - 6/24/2013	I-131	<3.10E-02	0.00E+00	3.10E-02
		Cs-134	<2.00E-02	0.00E+00	2.00E-02
		Cs-137	<2.19E-02	0.00E+00	2.19E-02
		Be-7	<1.46E-01	0.00E+00	1.46E-01
		K-40	<6.47E-01	0.00E+00	6.47E-01
260747	7/1/2013 - 7/8/2013	I-131	<1.02E-02	0.00E+00	1.02E-02
		Cs-134	<8.67E-03	0.00E+00	8.67E-03
		Cs-137	<7.87E-03	0.00E+00	7.87E-03
		Be-7	<7.00E-02	0.00E+00	7.00E-02
		K-40	4.77E-01	7.27E-02	1.18E-01
261686	7/8/2013 - 7/15/2013	I-131	<1.12E-02	0.00E+00	1.12E-02
		Cs-134	<6.96E-03	0.00E+00	6.96E-03
		Cs-137	<1.25E-02	0.00E+00	1.25E-02
		Be-7	<4.67E-02	0.00E+00	4.67E-02
		K-40	3.97E-01	8.47E-02	1.32E-01
261953	6/24/2013 - 7/1/2013	I-131	<2.04E-02	0.00E+00	2.04E-02
		Cs-134	<1.28E-02	0.00E+00	1.28E-02
		Cs-137	<1.51E-02	0.00E+00	1.51E-02
		Be-7	<1.50E-01	0.00E+00	1.50E-01
		K-40	5.31E-01	1.38E-01	2.31E-01
262196	7/15/2013 - 7/22/2013	I-131	<2.05E-02	0.00E+00	2.05E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.72E-02	0.00E+00	1.72E-02
		Be-7	<1.22E-01	0.00E+00	1.22E-01
		K-40	<4.72E-01	0.00E+00	4.72E-01
263652	7/29/2013 - 8/5/2013	I-131	<2.54E-02	0.00E+00	2.54E-02
		Cs-134	<1.64E-02	0.00E+00	1.64E-02
		Cs-137	<1.48E-02	0.00E+00	1.48E-02
		Be-7	<7.17E-02	0.00E+00	7.17E-02
		K-40	<4.40E-01	0.00E+00	4.40E-01
265043	7/22/2013 - 7/29/2013	I-131	<3.54E-02	0.00E+00	3.54E-02
		Cs-134	<1.73E-02	0.00E+00	1.73E-02
		Cs-137	<1.49E-02	0.00E+00	1.49E-02
		Be-7	<1.30E-01	0.00E+00	1.30E-01
		K-40	3.06E-01	1.07E-01	2.27E-01
266659	8/5/2013 - 8/12/2013	I-131	<1.94E-02	0.00E+00	1.94E-02
		Cs-134	<1.43E-02	0.00E+00	1.43E-02
		Cs-137	<1.79E-02	0.00E+00	1.79E-02
		Be-7	<9.50E-02	0.00E+00	9.50E-02
		K-40	5.02E-01	1.15E-01	7.14E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
267540	8/12/2013 - 8/20/2013	I-131	<2.40E-02	0.00E+00	2.40E-02
		Cs-134	<1.31E-02	0.00E+00	1.31E-02
		Cs-137	<1.26E-02	0.00E+00	1.26E-02
		Be-7	<1.30E-01	0.00E+00	1.30E-01
		K-40	3.83E-01	1.13E-01	2.90E-01
268234	8/20/2013 - 8/26/2013	I-131	<2.97E-02	0.00E+00	2.97E-02
		Cs-134	<2.02E-02	0.00E+00	2.02E-02
		Cs-137	<2.17E-02	0.00E+00	2.17E-02
		Be-7	<1.86E-01	0.00E+00	1.86E-01
		K-40	<6.34E-01	0.00E+00	6.34E-01
269705	8/26/2013 - 9/3/2013	I-131	<1.74E-02	0.00E+00	1.74E-02
		Cs-134	<7.32E-03	0.00E+00	7.32E-03
		Cs-137	<1.16E-02	0.00E+00	1.16E-02
		Be-7	<1.09E-01	0.00E+00	1.09E-01
		K-40	2.06E-01	5.96E-02	4.65E-02
270613	9/3/2013 - 9/9/2013	I-131	<2.31E-02	0.00E+00	2.31E-02
		Cs-134	<1.83E-02	0.00E+00	1.83E-02
		Cs-137	<2.37E-02	0.00E+00	2.37E-02
		Be-7	<1.33E-01	0.00E+00	1.33E-01
		K-40	5.11E-01	1.47E-01	2.27E-01
271335	9/9/2013 - 9/16/2013	I-131	<2.18E-02	0.00E+00	2.18E-02
		Cs-134	<1.47E-02	0.00E+00	1.47E-02
		Cs-137	<1.84E-02	0.00E+00	1.84E-02
		Be-7	<1.58E-01	0.00E+00	1.58E-01
		K-40	<4.76E-01	0.00E+00	4.76E-01
271719	9/16/2013 - 9/23/2013	I-131	<2.05E-02	0.00E+00	2.05E-02
		Cs-134	<1.65E-02	0.00E+00	1.65E-02
		Cs-137	<2.28E-02	0.00E+00	2.28E-02
		Be-7	<1.10E-01	0.00E+00	1.10E-01
		K-40	3.46E-01	9.59E-02	2.95E-01
272358	9/23/2013 - 9/30/2013	I-131	<1.91E-02	0.00E+00	1.91E-02
		Cs-134	<1.37E-02	0.00E+00	1.37E-02
		Cs-137	<1.94E-02	0.00E+00	1.94E-02
		Be-7	<1.56E-01	0.00E+00	1.56E-01
		K-40	<4.70E-01	0.00E+00	4.70E-01
272778	9/30/2013 - 10/7/2013	I-131	<2.43E-02	0.00E+00	2.43E-02
		Cs-134	<1.71E-02	0.00E+00	1.71E-02
		Cs-137	<2.02E-02	0.00E+00	2.02E-02
		Be-7	<1.32E-01	0.00E+00	1.32E-01
		K-40	7.28E-01	1.38E-01	1.97E-01
274002	10/7/2013 - 10/14/2013	I-131	<1.94E-02	0.00E+00	1.94E-02
		Cs-134	<8.36E-03	0.00E+00	8.36E-03
		Cs-137	<7.66E-03	0.00E+00	7.66E-03
		Be-7	<6.91E-02	0.00E+00	6.91E-02
		K-40	4.21E-01	7.11E-02	3.25E-02
274248	10/14/2013 - 10/21/2013	I-131	<1.52E-02	0.00E+00	1.52E-02
		Cs-134	<7.40E-03	0.00E+00	7.40E-03
		Cs-137	<1.11E-02	0.00E+00	1.11E-02
		Be-7	<7.05E-02	0.00E+00	7.05E-02
		K-40	6.01E-01	8.50E-02	1.29E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m<sup>3</sup>

Sample Point 60 [ INDICATOR - SE @ 0.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
274620	10/21/2013 - 10/28/2013	I-131	<1.71E-02	0.00E+00	1.71E-02
		Cs-134	<1.18E-02	0.00E+00	1.18E-02
		Cs-137	<1.43E-02	0.00E+00	1.43E-02
		Be-7	<1.20E-01	0.00E+00	1.20E-01
		K-40	3.47E-01	8.67E-02	5.86E-02
275208	10/28/2013 - 11/4/2013	I-131	<2.50E-02	0.00E+00	2.50E-02
		Cs-134	<1.44E-02	0.00E+00	1.44E-02
		Cs-137	<1.75E-02	0.00E+00	1.75E-02
		Be-7	<1.42E-01	0.00E+00	1.42E-01
		K-40	4.48E-01	1.29E-01	7.09E-02
277042	11/4/2013 - 11/11/2013	I-131	<2.12E-02	0.00E+00	2.12E-02
		Cs-134	<8.93E-03	0.00E+00	8.93E-03
		Cs-137	<1.77E-02	0.00E+00	1.77E-02
		Be-7	<1.12E-01	0.00E+00	1.12E-01
		K-40	3.38E-01	9.39E-02	2.49E-01
277052	11/18/2013 - 11/25/2013	I-131	<2.39E-02	0.00E+00	2.39E-02
		Cs-134	<1.09E-02	0.00E+00	1.09E-02
		Cs-137	<1.34E-02	0.00E+00	1.34E-02
		Be-7	<2.58E-02	0.00E+00	2.58E-02
		K-40	2.61E-01	9.66E-02	1.57E-01
277062	11/11/2013 - 11/18/2013	I-131	<1.80E-02	0.00E+00	1.80E-02
		Cs-134	<1.30E-02	0.00E+00	1.30E-02
		Cs-137	<1.90E-02	0.00E+00	1.90E-02
		Be-7	<1.15E-01	0.00E+00	1.15E-01
		K-40	<4.58E-01	0.00E+00	4.58E-01
278784	11/25/2013 - 12/2/2013	I-131	<2.15E-02	0.00E+00	2.15E-02
		Cs-134	<1.44E-02	0.00E+00	1.44E-02
		Cs-137	<2.39E-02	0.00E+00	2.39E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	4.69E-01	1.10E-01	2.35E-01
278855	12/2/2013 - 12/9/2013	I-131	<1.84E-02	0.00E+00	1.84E-02
		Cs-134	<1.34E-02	0.00E+00	1.34E-02
		Cs-137	<1.10E-02	0.00E+00	1.10E-02
		Be-7	<1.24E-01	0.00E+00	1.24E-01
		K-40	5.62E-01	1.12E-01	1.65E-01
279095	12/9/2013 - 12/16/2013	I-131	<1.35E-02	0.00E+00	1.35E-02
		Cs-134	<1.48E-02	0.00E+00	1.48E-02
		Cs-137	<1.98E-02	0.00E+00	1.98E-02
		Be-7	<1.05E-01	0.00E+00	1.05E-01
		K-40	4.23E-01	1.06E-01	2.40E-01
279723	12/16/2013 - 12/23/2013	I-131	<1.69E-02	0.00E+00	1.69E-02
		Cs-134	<9.04E-03	0.00E+00	9.04E-03
		Cs-137	<1.02E-02	0.00E+00	1.02E-02
		Be-7	<7.81E-02	0.00E+00	7.81E-02
		K-40	5.19E-01	9.32E-02	1.49E-01
280212	12/23/2013 - 12/30/2013	I-131	<3.18E-02	0.00E+00	3.18E-02
		Cs-134	<1.38E-02	0.00E+00	1.38E-02
		Cs-137	<1.31E-02	0.00E+00	1.31E-02
		Be-7	<1.23E-01	0.00E+00	1.23E-01
		K-40	4.39E-01	9.81E-02	5.93E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177520	1/7/2013 - 1/7/2013	I-131	<1.82E-02	0.00E+00	1.82E-02
177583	1/14/2013 - 1/14/2013	I-131	<1.23E-02	0.00E+00	1.23E-02
177628	1/21/2013 - 1/21/2013	I-131	<1.90E-02	0.00E+00	1.90E-02
177662	1/28/2013 - 1/28/2013	I-131	<2.25E-02	0.00E+00	2.25E-02
177696	2/4/2013 - 2/4/2013	I-131	<1.74E-02	0.00E+00	1.74E-02
177741	2/11/2013 - 2/11/2013	I-131	<1.82E-02	0.00E+00	1.82E-02
177779	2/18/2013 - 2/18/2013	I-131	<1.02E-02	0.00E+00	1.02E-02
177850	2/25/2013 - 2/25/2013	I-131	<1.66E-02	0.00E+00	1.66E-02
177886	3/4/2013 - 3/4/2013	I-131	<2.08E-02	0.00E+00	2.08E-02
177935	3/11/2013 - 3/11/2013	I-131	<1.51E-02	0.00E+00	1.51E-02
177971	3/18/2013 - 3/18/2013	I-131	<1.60E-02	0.00E+00	1.60E-02
177998	3/24/2013 - 3/24/2013	I-131	<1.81E-02	0.00E+00	1.81E-02
178032	4/1/2013 - 4/1/2013	I-131	<1.26E-02	0.00E+00	1.26E-02
178102	4/8/2013 - 4/8/2013	I-131	<1.92E-02	0.00E+00	1.92E-02
256384	4/8/2013 - 4/15/2013	I-131	<1.81E-02	0.00E+00	1.81E-02
		Cs-134	<1.19E-02	0.00E+00	1.19E-02
		Cs-137	<1.41E-02	0.00E+00	1.41E-02
		Be-7	<6.73E-02	0.00E+00	6.73E-02
		K-40	<3.94E-01	0.00E+00	3.94E-01
256654	4/15/2013 - 4/22/2013	I-131	<2.44E-02	0.00E+00	2.44E-02
		Cs-134	<1.39E-02	0.00E+00	1.39E-02
		Cs-137	<2.01E-02	0.00E+00	2.01E-02
		Be-7	<1.19E-01	0.00E+00	1.19E-01
		K-40	4.94E-01	1.10E-01	1.80E-01
257188	4/22/2013 - 4/29/2013	I-131	<1.38E-02	0.00E+00	1.38E-02
		Cs-134	<8.77E-03	0.00E+00	8.77E-03
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<6.98E-02	0.00E+00	6.98E-02
		K-40	<3.29E-01	0.00E+00	3.29E-01
257333	4/29/2013 - 5/6/2013	I-131	<1.97E-02	0.00E+00	1.97E-02
		Cs-134	<7.74E-03	0.00E+00	7.74E-03
		Cs-137	<1.66E-02	0.00E+00	1.66E-02
		Be-7	<6.21E-02	0.00E+00	6.21E-02
		K-40	4.05E-01	9.54E-02	1.70E-01
257778	5/6/2013 - 5/13/2013	I-131	<1.61E-02	0.00E+00	1.61E-02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
257778	5/6/2013 - 5/13/2013	Cs-134	<6.73E-03	0.00E+00	6.73E-03
		Cs-137	<1.53E-02	0.00E+00	1.53E-02
		Be-7	<6.76E-02	0.00E+00	6.76E-02
		K-40	<3.72E-01	0.00E+00	3.72E-01
258024	5/13/2013 - 5/20/2013	I-131	<1.59E-02	0.00E+00	1.59E-02
		Cs-134	<1.31E-02	0.00E+00	1.31E-02
		Cs-137	<1.18E-02	0.00E+00	1.18E-02
		Be-7	<8.85E-02	0.00E+00	8.85E-02
		K-40	3.76E-01	7.36E-02	1.06E-01
258270	5/20/2013 - 5/26/2013	I-131	<4.26E-02	0.00E+00	4.26E-02
		Cs-134	<2.55E-02	0.00E+00	2.55E-02
		Cs-137	<2.56E-02	0.00E+00	2.56E-02
		Be-7	<1.53E-01	0.00E+00	1.53E-01
		K-40	<6.56E-01	0.00E+00	6.56E-01
258606	5/26/2013 - 6/3/2013	I-131	<2.40E-02	0.00E+00	2.40E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<1.47E-02	0.00E+00	1.47E-02
		Be-7	<1.52E-01	0.00E+00	1.52E-01
		K-40	<4.67E-01	0.00E+00	4.67E-01
259080	6/3/2013 - 6/10/2013	I-131	<1.49E-02	0.00E+00	1.49E-02
		Cs-134	<1.03E-02	0.00E+00	1.03E-02
		Cs-137	<1.15E-02	0.00E+00	1.15E-02
		Be-7	<7.33E-02	0.00E+00	7.33E-02
		K-40	4.63E-01	8.18E-02	1.06E-01
259644	6/10/2013 - 6/18/2013	I-131	<2.61E-02	0.00E+00	2.61E-02
		Cs-134	<1.54E-02	0.00E+00	1.54E-02
		Cs-137	<1.72E-02	0.00E+00	1.72E-02
		Be-7	<1.35E-01	0.00E+00	1.35E-01
		K-40	<5.35E-01	0.00E+00	5.35E-01
260276	6/18/2013 - 6/24/2013	I-131	<1.48E-02	0.00E+00	1.48E-02
		Cs-134	<8.97E-03	0.00E+00	8.97E-03
		Cs-137	<1.22E-02	0.00E+00	1.22E-02
		Be-7	<6.98E-02	0.00E+00	6.98E-02
		K-40	6.28E-01	1.10E-01	1.06E-01
260748	7/1/2013 - 7/8/2013	I-131	<1.23E-02	0.00E+00	1.23E-02
		Cs-134	<8.99E-03	0.00E+00	8.99E-03
		Cs-137	<1.06E-02	0.00E+00	1.06E-02
		Be-7	<7.27E-02	0.00E+00	7.27E-02
		K-40	4.63E-01	8.06E-02	1.03E-01
261687	7/8/2013 - 7/15/2013	I-131	<1.12E-02	0.00E+00	1.12E-02
		Cs-134	<7.03E-03	0.00E+00	7.03E-03
		Cs-137	<1.23E-02	0.00E+00	1.23E-02
		Be-7	<5.10E-02	0.00E+00	5.10E-02
		K-40	2.72E-01	7.04E-02	1.48E-01
261954	6/24/2013 - 7/1/2013	I-131	<2.22E-02	0.00E+00	2.22E-02
		Cs-134	<2.15E-02	0.00E+00	2.15E-02
		Cs-137	<2.28E-02	0.00E+00	2.28E-02
		Be-7	<1.60E-01	0.00E+00	1.60E-01
		K-40	5.11E-01	1.20E-01	2.98E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
262197	7/15/2013 - 7/22/2013	I-131	<2.91E-02	0.00E+00	2.91E-02
		Cs-134	<2.29E-02	0.00E+00	2.29E-02
		Cs-137	<1.99E-02	0.00E+00	1.99E-02
		Be-7	<1.66E-01	0.00E+00	1.66E-01
		K-40	4.65E-01	1.16E-01	3.22E-01
263653	7/29/2013 - 8/5/2013	I-131	<2.81E-02	0.00E+00	2.81E-02
		Cs-134	<1.87E-02	0.00E+00	1.87E-02
		Cs-137	<1.19E-02	0.00E+00	1.19E-02
		Be-7	<1.49E-01	0.00E+00	1.49E-01
		K-40	6.17E-01	1.35E-01	2.80E-01
265044	7/22/2013 - 7/29/2013	I-131	<4.27E-02	0.00E+00	4.27E-02
		Cs-134	<1.52E-02	0.00E+00	1.52E-02
		Cs-137	<2.40E-02	0.00E+00	2.40E-02
		Be-7	<1.35E-01	0.00E+00	1.35E-01
		K-40	<5.47E-01	0.00E+00	5.47E-01
266660	8/5/2013 - 8/12/2013	I-131	<2.65E-02	0.00E+00	2.65E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<2.15E-02	0.00E+00	2.15E-02
		Be-7	<1.95E-01	0.00E+00	1.95E-01
		K-40	3.82E-01	1.41E-01	2.62E-01
267541	8/12/2013 - 8/20/2013	I-131	<1.92E-02	0.00E+00	1.92E-02
		Cs-134	<1.93E-02	0.00E+00	1.93E-02
		Cs-137	<1.49E-02	0.00E+00	1.49E-02
		Be-7	<1.53E-01	0.00E+00	1.53E-01
		K-40	3.28E-01	9.08E-02	1.81E-01
268235	8/20/2013 - 8/26/2013	I-131	<3.22E-02	0.00E+00	3.22E-02
		Cs-134	<2.30E-02	0.00E+00	2.30E-02
		Cs-137	<2.22E-02	0.00E+00	2.22E-02
		Be-7	<1.61E-01	0.00E+00	1.61E-01
		K-40	5.70E-01	1.38E-01	3.92E-01
269706	8/26/2013 - 9/3/2013	I-131	<1.94E-02	0.00E+00	1.94E-02
		Cs-134	<1.23E-02	0.00E+00	1.23E-02
		Cs-137	<1.24E-02	0.00E+00	1.24E-02
		Be-7	<1.01E-01	0.00E+00	1.01E-01
		K-40	<2.06E-01	0.00E+00	2.06E-01
270614	9/3/2013 - 9/9/2013	I-131	<2.89E-02	0.00E+00	2.89E-02
		Cs-134	<1.44E-02	0.00E+00	1.44E-02
		Cs-137	<2.21E-02	0.00E+00	2.21E-02
		Be-7	<1.89E-01	0.00E+00	1.89E-01
		K-40	5.68E-01	1.38E-01	2.53E-01
271336	9/9/2013 - 9/16/2013	I-131	<1.58E-02	0.00E+00	1.58E-02
		Cs-134	<1.41E-02	0.00E+00	1.41E-02
		Cs-137	<1.67E-02	0.00E+00	1.67E-02
		Be-7	<1.13E-01	0.00E+00	1.13E-01
		K-40	<6.00E-01	0.00E+00	6.00E-01
271720	9/16/2013 - 9/23/2013	I-131	<1.81E-02	0.00E+00	1.81E-02
		Cs-134	<1.84E-02	0.00E+00	1.84E-02
		Cs-137	<1.90E-02	0.00E+00	1.90E-02
		Be-7	<1.52E-01	0.00E+00	1.52E-01
		K-40	4.41E-01	1.10E-01	2.64E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272359	9/23/2013 - 9/30/2013	I-131	<2.11E-02	0.00E+00	2.11E-02
		Cs-134	<1.71E-02	0.00E+00	1.71E-02
		Cs-137	<2.01E-02	0.00E+00	2.01E-02
		Be-7	<1.25E-01	0.00E+00	1.25E-01
		K-40	4.75E-01	1.15E-01	7.56E-02
272779	9/30/2013 - 10/7/2013	I-131	<2.34E-02	0.00E+00	2.34E-02
		Cs-134	<1.56E-02	0.00E+00	1.56E-02
		Cs-137	<1.48E-02	0.00E+00	1.48E-02
		Be-7	<1.29E-01	0.00E+00	1.29E-01
		K-40	4.34E-01	1.12E-01	2.77E-01
274003	10/7/2013 - 10/14/2013	I-131	<2.89E-02	0.00E+00	2.89E-02
		Cs-134	<1.32E-02	0.00E+00	1.32E-02
		Cs-137	<1.23E-02	0.00E+00	1.23E-02
		Be-7	<1.02E-01	0.00E+00	1.02E-01
		K-40	<4.48E-01	0.00E+00	4.48E-01
274249	10/14/2013 - 10/21/2013	I-131	<2.46E-02	0.00E+00	2.46E-02
		Cs-134	<1.13E-02	0.00E+00	1.13E-02
		Cs-137	<1.62E-02	0.00E+00	1.62E-02
		Be-7	<1.05E-01	0.00E+00	1.05E-01
		K-40	4.84E-01	1.08E-01	2.16E-01
274622	10/21/2013 - 10/28/2013	I-131	<1.26E-02	0.00E+00	1.26E-02
		Cs-134	<6.36E-03	0.00E+00	6.36E-03
		Cs-137	<8.91E-03	0.00E+00	8.91E-03
		Be-7	<7.84E-02	0.00E+00	7.84E-02
		K-40	5.18E-01	8.77E-02	1.57E-01
275209	10/28/2013 - 11/4/2013	I-131	<2.43E-02	0.00E+00	2.43E-02
		Cs-134	<1.90E-02	0.00E+00	1.90E-02
		Cs-137	<2.91E-02	0.00E+00	2.91E-02
		Be-7	<1.11E-01	0.00E+00	1.11E-01
		K-40	2.73E-01	1.20E-01	3.40E-01
277043	11/4/2013 - 11/11/2013	I-131	<2.49E-02	0.00E+00	2.49E-02
		Cs-134	<2.01E-02	0.00E+00	2.01E-02
		Cs-137	<2.40E-02	0.00E+00	2.40E-02
		Be-7	<1.00E-01	0.00E+00	1.00E-01
		K-40	<4.82E-01	0.00E+00	4.82E-01
277053	11/18/2013 - 11/25/2013	I-131	<2.34E-02	0.00E+00	2.34E-02
		Cs-134	<6.81E-03	0.00E+00	6.81E-03
		Cs-137	<1.01E-02	0.00E+00	1.01E-02
		Be-7	<8.30E-02	0.00E+00	8.30E-02
		K-40	<3.63E-01	0.00E+00	3.63E-01
277063	11/11/2013 - 11/18/2013	I-131	<1.54E-02	0.00E+00	1.54E-02
		Cs-134	<8.72E-03	0.00E+00	8.72E-03
		Cs-137	<1.20E-02	0.00E+00	1.20E-02
		Be-7	<9.38E-02	0.00E+00	9.38E-02
		K-40	6.96E-01	9.75E-02	1.87E-01
278785	11/25/2013 - 12/2/2013	I-131	<2.94E-02	0.00E+00	2.94E-02
		Cs-134	<1.87E-02	0.00E+00	1.87E-02
		Cs-137	<1.48E-02	0.00E+00	1.48E-02
		Be-7	<1.40E-01	0.00E+00	1.40E-01
		K-40	3.76E-01	1.04E-01	2.07E-01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: AIR RADIOIODINE Concentration (Activity): pCi/m3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
278856	12/2/2013 - 12/9/2013	I-131	<2.02E-02	0.00E+00	2.02E-02
		Cs-134	<1.53E-02	0.00E+00	1.53E-02
		Cs-137	<1.40E-02	0.00E+00	1.40E-02
		Be-7	<1.64E-01	0.00E+00	1.64E-01
		K-40	4.51E-01	1.06E-01	2.69E-01
279096	12/9/2013 - 12/16/2013	I-131	<2.11E-02	0.00E+00	2.11E-02
		Cs-134	<1.78E-02	0.00E+00	1.78E-02
		Cs-137	<1.94E-02	0.00E+00	1.94E-02
		Be-7	<1.27E-01	0.00E+00	1.27E-01
		K-40	4.69E-01	1.17E-01	2.11E-01
279724	12/16/2013 - 12/23/2013	I-131	<2.61E-02	0.00E+00	2.61E-02
		Cs-134	<1.57E-02	0.00E+00	1.57E-02
		Cs-137	<2.17E-02	0.00E+00	2.17E-02
		Be-7	<1.40E-01	0.00E+00	1.40E-01
		K-40	<6.15E-01	0.00E+00	6.15E-01
280213	12/23/2013 - 12/30/2013	I-131	<2.17E-02	0.00E+00	2.17E-02
		Cs-134	<9.76E-03	0.00E+00	9.76E-03
		Cs-137	<1.12E-02	0.00E+00	1.12E-02
		Be-7	<8.87E-02	0.00E+00	8.87E-02
		K-40	5.91E-01	8.53E-02	8.82E-02

Media Type: AQUATIC VEGETATION Concentration (Activity): pCi/kg

Sample Point 41 [ CONTROL - N @ 8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259476	5/30/2013 - 5/30/2013	I-131	<1.94E+01	0.00E+00	1.94E+01
		Cs-134	<7.53E+00	0.00E+00	7.53E+00
		Cs-137	<9.79E+00	0.00E+00	9.79E+00
		Be-7	<9.38E+01	0.00E+00	9.38E+01
		K-40	1.78E+03	9.81E+01	6.62E+01

Sample Point 45 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259474	5/30/2013 - 5/30/2013	I-131	<3.59E+01	0.00E+00	3.59E+01
		Cs-134	<2.33E+01	0.00E+00	2.33E+01
		Cs-137	<2.22E+01	0.00E+00	2.22E+01
		Be-7	8.00E+02	1.15E+02	1.70E+02
		K-40	5.06E+02	1.18E+02	2.31E+02

Sample Point 46 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259475	5/31/2013 - 5/31/2013	I-131	<2.53E+01	0.00E+00	2.53E+01
		Cs-134	<1.25E+01	0.00E+00	1.25E+01
		Cs-137	<1.38E+01	0.00E+00	1.38E+01
		Be-7	1.53E+03	9.32E+01	1.07E+02
		K-40	1.25E+03	9.48E+01	1.04E+02

Sample Point 66 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259477	5/31/2013 - 5/31/2013	I-131	<2.89E+01	0.00E+00	2.89E+01
		Cs-134	<1.30E+01	0.00E+00	1.30E+01
		Cs-137	<1.78E+01	0.00E+00	1.78E+01
		Be-7	5.40E+02	7.26E+01	1.14E+02
		K-40	7.40E+02	1.05E+02	1.26E+02

Media Type: CROPS Concentration (Activity): pCi/kg

Sample Point 49 [ CONTROL - W @ 10 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
279031	11/25/2013 - 11/25/2013	I-131	<3.73E+01	0.00E+00	3.73E+01	COLLARDS

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.

# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: CROPS Concentration (Activity): pCi/kg

Sample Point 49 [ CONTROL - W @ 10 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
279031	11/25/2013 - 11/25/2013					COLLARDS
		Cs-134	<2.11E+01	0.00E+00	2.11E+01	
		Cs-137	<2.38E+01	0.00E+00	2.38E+01	
		Be-7	<1.86E+02	0.00E+00	1.86E+02	
		K-40	3.73E+03	2.53E+02	1.50E+02	

Sample Point 54 [ INDICATOR - E @ 10.1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
264471	7/24/2013 - 7/24/2013					WHEAT
		I-131	<2.30E+01	0.00E+00	2.30E+01	
		Cs-134	<1.25E+01	0.00E+00	1.25E+01	
		Cs-137	<1.41E+01	0.00E+00	1.41E+01	
		Be-7	<1.34E+02	0.00E+00	1.34E+02	
		K-40	4.11E+03	2.09E+02	1.47E+02	

Sample Point 58 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
279030	11/25/2013 - 11/25/2013					COLLARDS
		I-131	<2.16E+01	0.00E+00	2.16E+01	
		Cs-134	<8.59E+00	0.00E+00	8.59E+00	
		Cs-137	<1.53E+01	0.00E+00	1.53E+01	
		Be-7	<1.31E+02	0.00E+00	1.31E+02	
		K-40	2.95E+03	1.62E+02	1.30E+02	

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 45 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
175049	5/16/2012 - 5/16/2012					BOTMFEEDER
		Mn-54	<1.30E+02	0.00E+00	1.30E+02	
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	4.35E+01	2.13E+01	1.50E+02	
		K-40	3.83E+03	5.79E+02		
		Bi-214	8.80E+01	3.97E+01		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
175050	5/16/2012 - 5/16/2012					FREESWIM
		Mn-54	<1.30E+02	0.00E+00	1.30E+02	
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	4.21E+01	2.50E+01	1.50E+02	
		K-40	3.00E+03	4.99E+02		
		Pb-212	5.30E+01	2.66E+01		
		Bi-214	9.63E+01	4.19E+01		
		Pb-214	1.24E+02	4.24E+01		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
176986	11/12/2012 - 11/12/2012					BOTMFEEDER
		Mn-54	<1.30E+02	0.00E+00	1.30E+02	
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	3.74E+01	1.42E+01	1.50E+02	
		K-40	2.51E+03	4.12E+02		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
176987	11/7/2012 - 11/7/2012					FREESWIM
		Mn-54	<1.30E+02	0.00E+00	1.30E+02	
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	3.51E+01	1.84E+01	1.50E+02	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 45 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
176987	11/7/2012 - 11/7/2012	K-40	4.54E+03	6.39E+02		FREESWIM
		Bi-214	3.88E+01	2.62E+01		

Sample Point 46 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
175051	5/18/2012 - 5/18/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	BOTMFEEDER
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	2.77E+01	1.56E+01	1.50E+02	
		K-40	3.28E+03	4.91E+02		
		Pb-212	3.71E+01	2.12E+01		
		Bi-214	6.22E+01	3.48E+01		
		Pb-214	6.40E+01	3.22E+01		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
175052	5/18/2012 - 5/18/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	FREESWIM
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	5.21E+01	1.96E+01	1.50E+02	
		K-40	3.04E+03	5.10E+02		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
176988	11/8/2012 - 11/8/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	BOTMFEEDER
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	1.82E+01	1.38E+01	1.50E+02	
		K-40	3.79E+03	5.88E+02		
		Tl-208	1.66E+01	1.10E+01		
		Pb-212	2.63E+01	2.00E+01		
		Bi-214	3.33E+01	2.94E+01		
		Pb-214	7.06E+01	3.13E+01		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
176989	11/8/2012 - 11/8/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	FREESWIM
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	3.52E+01	1.84E+01	1.50E+02	
		K-40	4.14E+03	5.85E+02		
		Bi-214	5.20E+01	3.02E+01		

Sample Point 47 [ CONTROL - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
175053	5/15/2012 - 5/15/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	BOTMFEEDER
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	4.20E+01	1.75E+01	1.50E+02	
		K-40	3.39E+03	5.78E+02		
		Pb-212	4.26E+01	3.00E+01		
		Bi-214	1.46E+02	4.88E+01		
		Pb-214	1.06E+02	4.34E+01		

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: FISH Concentration (Activity): pCi/kg

Sample Point 47 [ CONTROL - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
175054	5/15/2012 - 5/15/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	FREESWIM
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	7.75E+01	2.54E+01	1.50E+02	
		K-40	3.26E+03	5.74E+02		
		Tl-208	2.35E+01	1.98E+01		
		Pb-212	4.51E+01	2.91E+01		
		Bi-214	1.65E+02	5.32E+01		
		Pb-214	1.50E+02	4.05E+01		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
176990	11/8/2012 - 11/8/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	BOTMFEEDER
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	3.12E+01	1.94E+01	1.50E+02	
		K-40	3.27E+03	5.60E+02		
		Bi-214	1.44E+02	4.35E+01		
		Pb-214	1.89E+02	4.81E+01		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
176991	11/6/2012 - 11/6/2012	Mn-54	<1.30E+02	0.00E+00	1.30E+02	FREESWIM
		Co-58	<1.30E+02	0.00E+00	1.30E+02	
		Fe-59	<2.60E+02	0.00E+00	2.60E+02	
		Co-60	<1.30E+02	0.00E+00	1.30E+02	
		Zn-65	<2.60E+02	0.00E+00	2.60E+02	
		Cs-134	<1.30E+02	0.00E+00	1.30E+02	
		Cs-137	4.20E+01	2.01E+01	1.50E+02	
		K-40	3.42E+03	5.44E+02		
		Pb-212	3.35E+01	2.68E+01		
		Bi-214	9.62E+01	3.92E+01		
		Pb-214	1.29E+02	3.92E+01		

Media Type: GROUND WATER Concentration (Activity): pCi

Sample Point 42 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177780	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.14E+02	5.09E+01	
		Pb-212	9.87E+00	9.06E+00	
		Bi-214	3.02E+01	8.10E+00	
		Pb-214	4.81E+01	8.71E+00	
		Ra-226	1.48E+02	6.91E+01	
		Th-234	2.87E+02	1.10E+02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177826	2/12/2013 - 2/12/2013	H3GW	<2.05E+02	0.00E+00	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258452	5/22/2013 - 5/22/2013	Mn-54	<6.63E+00	0.00E+00	6.63E+00
		Co-58	<7.71E+00	0.00E+00	7.71E+00
		Fe-59	<1.52E+01	0.00E+00	1.52E+01
		Co-60	<1.08E+01	0.00E+00	1.08E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 42 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258452	5/22/2013 - 5/22/2013	Zn-65	<1.64E+01	0.00E+00	1.64E+01
		Zr-95	<1.25E+01	0.00E+00	1.25E+01
		Nb-95	<6.15E+00	0.00E+00	6.15E+00
		I-131	<9.68E+00	0.00E+00	9.68E+00
		Cs-134	<5.45E+00	0.00E+00	5.45E+00
		Cs-137	<5.85E+00	0.00E+00	5.85E+00
		BaLa-140	<1.31E+01	0.00E+00	1.31E+01
		Be-7	<4.97E+01	0.00E+00	4.97E+01
		K-40	1.29E+02	2.49E+01	6.86E+01
		H3GW	<1.15E+02	0.00E+00	1.88E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271736	8/14/2013 - 8/14/2013	Mn-54	<1.70E+00	0.00E+00	1.70E+00
		Co-58	<2.37E+00	0.00E+00	2.37E+00
		Fe-59	<6.27E+00	0.00E+00	6.27E+00
		Co-60	<1.56E+00	0.00E+00	1.56E+00
		Zn-65	<3.94E+00	0.00E+00	3.94E+00
		Zr-95	<4.75E+00	0.00E+00	4.75E+00
		Nb-95	<4.13E+00	0.00E+00	4.13E+00
		I-131	<1.13E+02	0.00E+00	1.13E+02
		Cs-134	<1.58E+00	0.00E+00	1.58E+00
		Cs-137	<1.65E+00	0.00E+00	1.65E+00
		BaLa-140	<2.37E+01	0.00E+00	2.37E+01
		Be-7	<2.51E+01	0.00E+00	2.51E+01
		K-40	3.18E+02	1.38E+01	1.67E+01
		H3GW	<-3.1E+01	0.00E+00	1.82E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277263	11/11/2013 - 11/11/2013	Mn-54	<5.14E+00	0.00E+00	5.14E+00
		Co-58	<4.32E+00	0.00E+00	4.32E+00
		Fe-59	<1.23E+01	0.00E+00	1.23E+01
		Co-60	<7.01E+00	0.00E+00	7.01E+00
		Zn-65	<1.16E+01	0.00E+00	1.16E+01
		Zr-95	<9.98E+00	0.00E+00	9.98E+00
		Nb-95	<6.55E+00	0.00E+00	6.55E+00
		I-131	<8.41E+00	0.00E+00	8.41E+00
		Cs-134	<4.95E+00	0.00E+00	4.95E+00
		Cs-137	<6.28E+00	0.00E+00	6.28E+00
		BaLa-140	<6.43E+00	0.00E+00	6.43E+00
		Be-7	<3.60E+01	0.00E+00	3.60E+01
		K-40	1.22E+02	2.55E+01	4.86E+01
		H3GW	<7.76E+01	0.00E+00	1.45E+02

## Sample Point 64 [ INDICATOR - SE @ 0.6 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177781	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	4.89E+02	7.24E+01	
		Bi-214	5.75E+01	1.01E+01	
		Pb-214	3.89E+01	8.36E+00	
		Ra-226	1.37E+02	8.49E+01	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177827	2/12/2013 - 2/12/2013	H3GW	<2.06E+02	0.00E+00	2.06E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258453	5/22/2013 - 5/22/2013	Mn-54	<7.26E+00	0.00E+00	7.26E+00
		Co-58	<7.70E+00	0.00E+00	7.70E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 64 [ INDICATOR - SE @ 0.6 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258453	5/22/2013 - 5/22/2013	Fe-59	<1.45E+01	0.00E+00	1.45E+01
		Co-60	<8.23E+00	0.00E+00	8.23E+00
		Zn-65	<1.45E+01	0.00E+00	1.45E+01
		Zr-95	<1.43E+01	0.00E+00	1.43E+01
		Nb-95	<8.45E+00	0.00E+00	8.45E+00
		I-131	<1.37E+01	0.00E+00	1.37E+01
		Cs-134	<7.57E+00	0.00E+00	7.57E+00
		Cs-137	<8.28E+00	0.00E+00	8.28E+00
		BaLa-140	<9.82E+00	0.00E+00	9.82E+00
		Be-7	<7.07E+01	0.00E+00	7.07E+01
		K-40	4.58E+02	7.06E+01	7.16E+01
		H3GW	<5.54E+01	0.00E+00	1.89E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271737	8/14/2013 - 8/14/2013	Mn-54	<2.68E+00	0.00E+00	2.68E+00
		Co-58	<3.44E+00	0.00E+00	3.44E+00
		Fe-59	<9.18E+00	0.00E+00	9.18E+00
		Co-60	<3.32E+00	0.00E+00	3.32E+00
		Zn-65	<6.14E+00	0.00E+00	6.14E+00
		Zr-95	<7.02E+00	0.00E+00	7.02E+00
		Nb-95	<6.48E+00	0.00E+00	6.48E+00
		I-131	<1.16E+02	0.00E+00	1.16E+02
		Cs-134	<2.48E+00	0.00E+00	2.48E+00
		Cs-137	<2.70E+00	0.00E+00	2.70E+00
		BaLa-140	<3.00E+01	0.00E+00	3.00E+01
		Be-7	<3.68E+01	0.00E+00	3.68E+01
		K-40	2.18E+02	1.95E+01	2.50E+01
		H3GW	<2.37E+00	0.00E+00	1.80E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277241	11/11/2013 - 11/11/2013	Mn-54	<5.72E+00	0.00E+00	5.72E+00
		Co-58	<6.76E+00	0.00E+00	6.76E+00
		Fe-59	<1.19E+01	0.00E+00	1.19E+01
		Co-60	<5.20E+00	0.00E+00	5.20E+00
		Zn-65	<9.81E+00	0.00E+00	9.81E+00
		Zr-95	<1.35E+01	0.00E+00	1.35E+01
		Nb-95	<7.43E+00	0.00E+00	7.43E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<6.28E+00	0.00E+00	6.28E+00
		Cs-137	<6.45E+00	0.00E+00	6.45E+00
		BaLa-140	<8.72E+00	0.00E+00	8.72E+00
		Be-7	<5.86E+01	0.00E+00	5.86E+01
		K-40	2.62E+02	5.79E+01	7.53E+01
		H3GW	<1.7E+01	0.00E+00	1.45E+02

## Sample Point 68 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177744	2/12/2013 - 2/12/2013	LLI-131	<3.01E-01	0.00E+00	3.01E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177782	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.44E+02	4.87E+01	
		Bi-214	2.45E+01	7.52E+00	
		Pb-214	1.54E+01	6.29E+00	
Ra-226	1.90E+02	7.13E+01			
Th-234	1.56E+02	1.05E+02			

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/

Sample Point 68 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177828	2/12/2013 - 2/12/2013	H3GW	5.05E+02	1.28E+02	2.04E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258449	5/22/2013 - 5/22/2013	Mn-54	<7.09E+00	0.00E+00	7.09E+00
		Co-58	<7.83E+00	0.00E+00	7.83E+00
		Fe-59	<1.57E+01	0.00E+00	1.57E+01
		Co-60	<1.01E+01	0.00E+00	1.01E+01
		Zn-65	<1.55E+01	0.00E+00	1.55E+01
		Zr-95	<1.39E+01	0.00E+00	1.39E+01
		Nb-95	<8.26E+00	0.00E+00	8.26E+00
		I-131	<1.29E+01	0.00E+00	1.29E+01
		Cs-134	<7.76E+00	0.00E+00	7.76E+00
		Cs-137	<1.00E+01	0.00E+00	1.00E+01
		BaLa-140	<1.28E+01	0.00E+00	1.28E+01
		Be-7	<5.82E+01	0.00E+00	5.82E+01
		K-40	2.99E+02	3.84E+01	7.25E+01
		Be-7	<4.85E+00	0.00E+00	4.85E+00
		K-40	3.00E+01	4.80E+00	5.98E+00
		LLI-131	<6.48E-01	0.00E+00	6.48E-01
		H3GW	2.73E+02	6.16E+01	1.88E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271733	8/19/2013 - 8/19/2013	Mn-54	<2.76E+00	0.00E+00	2.76E+00
		Co-58	<3.59E+00	0.00E+00	3.59E+00
		Fe-59	<8.75E+00	0.00E+00	8.75E+00
		Co-60	<2.89E+00	0.00E+00	2.89E+00
		Zn-65	<5.78E+00	0.00E+00	5.78E+00
		Zr-95	<6.30E+00	0.00E+00	6.30E+00
		Nb-95	<5.43E+00	0.00E+00	5.43E+00
		I-131	<6.27E+01	0.00E+00	6.27E+01
		Cs-134	<2.37E+00	0.00E+00	2.37E+00
		Cs-137	<2.83E+00	0.00E+00	2.83E+00
		BaLa-140	<2.20E+01	0.00E+00	2.20E+01
		Be-7	<3.17E+01	0.00E+00	3.17E+01
		K-40	1.96E+02	1.73E+01	2.37E+01
		Be-7	<4.19E+00	0.00E+00	4.19E+00
		K-40	1.38E+01	2.74E+00	3.44E+00
		LLI-131	<7.54E+00	0.00E+00	7.54E+00
		H3GW	<2.22E+01	0.00E+00	1.93E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277264	11/11/2013 - 11/11/2013	Mn-54	<6.75E+00	0.00E+00	6.75E+00
		Co-58	<5.66E+00	0.00E+00	5.66E+00
		Fe-59	<1.25E+01	0.00E+00	1.25E+01
		Co-60	<7.11E+00	0.00E+00	7.11E+00
		Zn-65	<1.26E+01	0.00E+00	1.26E+01
		Zr-95	<1.22E+01	0.00E+00	1.22E+01
		Nb-95	<7.89E+00	0.00E+00	7.89E+00
		I-131	<1.06E+01	0.00E+00	1.06E+01
		Cs-134	<5.36E+00	0.00E+00	5.36E+00
		Cs-137	<6.58E+00	0.00E+00	6.58E+00
		BaLa-140	<9.31E+00	0.00E+00	9.31E+00
		Be-7	<5.73E+01	0.00E+00	5.73E+01
		K-40	2.61E+02	4.34E+01	6.22E+01
		Be-7	<2.87E+00	0.00E+00	2.87E+00
		K-40	2.25E+01	2.86E+00	4.07E+00
		LLI-131	<6.27E-01	0.00E+00	6.27E-01
		H3GW	2.21E+02	4.81E+01	1.45E+02

Sample Point 69 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177783	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 69 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177783	2/12/2013 - 2/12/2013	Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	4.43E+02	6.30E+01	
		Pb-212	1.34E+01	6.32E+00	
		Bi-214	2.54E+01	7.60E+00	
		Pb-214	3.22E+01	8.33E+00	
		Ra-226	1.56E+02	8.12E+01	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177829	2/12/2013 - 2/12/2013	H3GW	<2.05E+02	0.00E+00	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258450	5/22/2013 - 5/22/2013	Mn-54	<9.26E+00	0.00E+00	9.26E+00
		Co-58	<7.30E+00	0.00E+00	7.30E+00
		Fe-59	<2.40E+01	0.00E+00	2.40E+01
		Co-60	<1.28E+01	0.00E+00	1.28E+01
		Zn-65	<2.29E+01	0.00E+00	2.29E+01
		Zr-95	<1.42E+01	0.00E+00	1.42E+01
		Nb-95	<1.08E+01	0.00E+00	1.08E+01
		I-131	<1.44E+01	0.00E+00	1.44E+01
		Cs-134	<6.66E+00	0.00E+00	6.66E+00
		Cs-137	<1.09E+01	0.00E+00	1.09E+01
		BaLa-140	<1.45E+01	0.00E+00	1.45E+01
		Be-7	<6.89E+01	0.00E+00	6.89E+01
		K-40	<1.78E+02	0.00E+00	1.78E+02
		H3GW	<4.57E+01	0.00E+00	1.89E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271734	8/14/2013 - 8/14/2013	Mn-54	<2.65E+00	0.00E+00	2.65E+00
		Co-58	<3.36E+00	0.00E+00	3.36E+00
		Fe-59	<8.84E+00	0.00E+00	8.84E+00
		Co-60	<3.16E+00	0.00E+00	3.16E+00
		Zn-65	<6.22E+00	0.00E+00	6.22E+00
		Zr-95	<6.50E+00	0.00E+00	6.50E+00
		Nb-95	<5.81E+00	0.00E+00	5.81E+00
		I-131	<1.07E+02	0.00E+00	1.07E+02
		Cs-134	<2.28E+00	0.00E+00	2.28E+00
		Cs-137	<2.90E+00	0.00E+00	2.90E+00
		BaLa-140	<3.20E+01	0.00E+00	3.20E+01
		Be-7	<3.46E+01	0.00E+00	3.46E+01
		K-40	2.30E+02	1.86E+01	2.49E+01
		H3GW	<9.82E+00	0.00E+00	1.93E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277265	11/11/2013 - 11/11/2013	Mn-54	<6.02E+00	0.00E+00	6.02E+00
		Co-58	<6.14E+00	0.00E+00	6.14E+00
		Fe-59	<1.04E+01	0.00E+00	1.04E+01
		Co-60	<6.49E+00	0.00E+00	6.49E+00
		Zn-65	<1.46E+01	0.00E+00	1.46E+01
		Zr-95	<1.16E+01	0.00E+00	1.16E+01
		Nb-95	<7.82E+00	0.00E+00	7.82E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<5.40E+00	0.00E+00	5.40E+00
		Cs-137	<7.18E+00	0.00E+00	7.18E+00
		BaLa-140	<1.30E+01	0.00E+00	1.30E+01
		Be-7	<4.85E+01	0.00E+00	4.85E+01
		K-40	1.68E+02	3.25E+01	7.37E+01
		H3GW	<2.09E+01	0.00E+00	1.45E+02

Sample Point 70 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177784	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/

Sample Point 70 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD		
177784	2/12/2013 - 2/12/2013	Co-60	<1.50E+01	0.00E+00	1.50E+01		
		Zn-65	<3.00E+01	0.00E+00	3.00E+01		
		Zr-95	<1.50E+01	0.00E+00	1.50E+01		
		Nb-95	<1.50E+01	0.00E+00	1.50E+01		
		I-131	<1.50E+01	0.00E+00	1.50E+01		
		Cs-134	<1.50E+01	0.00E+00	1.50E+01		
		Cs-137	<1.80E+01	0.00E+00	1.80E+01		
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01		
		K-40	1.92E+02	4.90E+01			
		Bi-214	3.60E+01	8.22E+00			
		Pb-214	3.57E+01	8.50E+00			
		Ra-226	1.91E+02	6.55E+01			
		Th-234	1.15E+02	9.63E+01			
		177830	2/13/2013 - 2/13/2013	H3GW	<2.05E+02	0.00E+00	2.05E+02
258451	5/22/2013 - 5/22/2013	Mn-54	<7.04E+00	0.00E+00	7.04E+00		
		Co-58	<7.73E+00	0.00E+00	7.73E+00		
		Fe-59	<1.73E+01	0.00E+00	1.73E+01		
		Co-60	<8.88E+00	0.00E+00	8.88E+00		
		Zn-65	<1.68E+01	0.00E+00	1.68E+01		
		Zr-95	<1.28E+01	0.00E+00	1.28E+01		
		Nb-95	<8.05E+00	0.00E+00	8.05E+00		
		I-131	<1.13E+01	0.00E+00	1.13E+01		
		Cs-134	<7.12E+00	0.00E+00	7.12E+00		
		Cs-137	<9.36E+00	0.00E+00	9.36E+00		
		BaLa-140	<1.37E+01	0.00E+00	1.37E+01		
		Be-7	<7.12E+01	0.00E+00	7.12E+01		
		K-40	3.63E+02	4.56E+01	6.62E+01		
		H3GW	<1.20E+01	0.00E+00	1.88E+02		
		271735	8/14/2013 - 8/14/2013	Mn-54	<2.42E+00	0.00E+00	2.42E+00
				Co-58	<3.46E+00	0.00E+00	3.46E+00
Fe-59	<8.46E+00			0.00E+00	8.46E+00		
Co-60	<2.97E+00			0.00E+00	2.97E+00		
Zn-65	<5.23E+00			0.00E+00	5.23E+00		
Zr-95	<5.92E+00			0.00E+00	5.92E+00		
Nb-95	<5.27E+00			0.00E+00	5.27E+00		
I-131	<9.40E+01			0.00E+00	9.40E+01		
Cs-134	<2.07E+00			0.00E+00	2.07E+00		
Cs-137	<2.27E+00			0.00E+00	2.27E+00		
BaLa-140	<3.10E+01			0.00E+00	3.10E+01		
Be-7	<2.95E+01			0.00E+00	2.95E+01		
K-40	<4.97E+01			0.00E+00	4.97E+01		
H3GW	<6.1E+01			0.00E+00	1.92E+02		
277266	11/11/2013 - 11/11/2013			Mn-54	<7.12E+00	0.00E+00	7.12E+00
				Co-58	<7.82E+00	0.00E+00	7.82E+00
		Fe-59	<1.81E+01	0.00E+00	1.81E+01		
		Co-60	<8.04E+00	0.00E+00	8.04E+00		
		Zn-65	<1.93E+01	0.00E+00	1.93E+01		
		Zr-95	<1.32E+01	0.00E+00	1.32E+01		
		Nb-95	<8.64E+00	0.00E+00	8.64E+00		
		I-131	<1.32E+01	0.00E+00	1.32E+01		
		Cs-134	<8.04E+00	0.00E+00	8.04E+00		
		Cs-137	<7.88E+00	0.00E+00	7.88E+00		
		BaLa-140	<1.31E+01	0.00E+00	1.31E+01		
		Be-7	<6.40E+01	0.00E+00	6.40E+01		
		K-40	2.85E+02	4.92E+01	6.86E+01		
		H3GW	<-1.5E+01	0.00E+00	1.45E+02		

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 71 [ INDICATOR - NNW @ 0.87 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177785	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	5.61E+02	7.60E+01	
		Pb-212	1.66E+01	1.27E+01	
		Bi-214	2.81E+01	8.09E+00	
		Pb-214	2.49E+01	9.10E+00	
177831	2/12/2013 - 2/12/2013	H3GW	8.16E+02	1.32E+02	2.05E+02
258442	5/14/2013 - 5/14/2013	Mn-54	<3.48E+00	0.00E+00	3.48E+00
		Co-58	<3.39E+00	0.00E+00	3.39E+00
		Fe-59	<7.86E+00	0.00E+00	7.86E+00
		Co-60	<3.06E+00	0.00E+00	3.06E+00
		Zn-65	<6.96E+00	0.00E+00	6.96E+00
		Zr-95	<6.70E+00	0.00E+00	6.70E+00
		Nb-95	<4.66E+00	0.00E+00	4.66E+00
		I-131	<1.42E+01	0.00E+00	1.42E+01
		Cs-134	<3.39E+00	0.00E+00	3.39E+00
		Cs-137	<3.45E+00	0.00E+00	3.45E+00
		BaLa-140	<7.76E+00	0.00E+00	7.76E+00
		Be-7	<3.70E+01	0.00E+00	3.70E+01
		K-40	5.81E+02	2.85E+01	2.89E+01
		H3GW	5.47E+02	6.62E+01	1.89E+02
		271727	8/13/2013 - 8/13/2013	Mn-54	<9.55E-01
Co-58	<1.28E+00			0.00E+00	1.28E+00
Fe-59	<3.12E+00			0.00E+00	3.12E+00
Co-60	<8.79E-01			0.00E+00	8.79E-01
Zn-65	<2.14E+00			0.00E+00	2.14E+00
Zr-95	<2.42E+00			0.00E+00	2.42E+00
Nb-95	<2.29E+00			0.00E+00	2.29E+00
I-131	<4.50E+01			0.00E+00	4.50E+01
Cs-134	<8.97E-01			0.00E+00	8.97E-01
Cs-137	<9.43E-01			0.00E+00	9.43E-01
BaLa-140	<1.03E+01			0.00E+00	1.03E+01
Be-7	<1.41E+01			0.00E+00	1.41E+01
K-40	1.60E+02			6.72E+00	8.64E+00
H3GW	<7.59E+01			0.00E+00	1.85E+02
277242	11/12/2013 - 11/12/2013			Mn-54	<7.31E+00
		Co-58	<3.73E+00	0.00E+00	3.73E+00
		Fe-59	<1.50E+01	0.00E+00	1.50E+01
		Co-60	<7.42E+00	0.00E+00	7.42E+00
		Zn-65	<1.38E+01	0.00E+00	1.38E+01
		Zr-95	<1.35E+01	0.00E+00	1.35E+01
		Nb-95	<6.56E+00	0.00E+00	6.56E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<6.83E+00	0.00E+00	6.83E+00
		Cs-137	<8.33E+00	0.00E+00	8.33E+00
		BaLa-140	<8.43E+00	0.00E+00	8.43E+00
		Be-7	<5.48E+01	0.00E+00	5.48E+01
		K-40	9.70E+01	2.35E+01	8.24E+01
		H3GW	<1.37E+02	0.00E+00	1.44E+02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/

Sample Point 72 [ INDICATOR - E @ 0.1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177786	2/11/2013 - 2/11/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.74E+02	5.73E+01	
		Tl-208	1.15E+01	3.92E+00	
		Pb-212	4.01E+01	1.41E+01	
		Bi-214	4.92E+01	9.91E+00	
		Pb-214	6.31E+01	9.94E+00	
		Ra-226	2.30E+02	7.60E+01	
		Ac-228	2.90E+01	1.45E+01	
		Th-234	1.42E+02	1.18E+02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177832	2/11/2013 - 2/11/2013	H3GW	3.61E+02	1.28E+02	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258446	5/15/2013 - 5/15/2013	Mn-54	<3.22E+00	0.00E+00	3.22E+00
		Co-58	<3.70E+00	0.00E+00	3.70E+00
		Fe-59	<7.73E+00	0.00E+00	7.73E+00
		Co-60	<3.58E+00	0.00E+00	3.58E+00
		Zn-65	<6.64E+00	0.00E+00	6.64E+00
		Zr-95	<6.30E+00	0.00E+00	6.30E+00
		Nb-95	<4.59E+00	0.00E+00	4.59E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<2.97E+00	0.00E+00	2.97E+00
		Cs-137	<3.43E+00	0.00E+00	3.43E+00
		BaLa-140	<1.13E+01	0.00E+00	1.13E+01
		Be-7	<2.90E+01	0.00E+00	2.90E+01
		K-40	1.32E+02	2.07E+01	3.62E+01
		H3GW	2.34E+02	6.08E+01	1.87E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271729	8/14/2013 - 8/14/2013	Mn-54	<1.89E+00	0.00E+00	1.89E+00
		Co-58	<2.86E+00	0.00E+00	2.86E+00
		Fe-59	<7.66E+00	0.00E+00	7.66E+00
		Co-60	<1.77E+00	0.00E+00	1.77E+00
		Zn-65	<4.44E+00	0.00E+00	4.44E+00
		Zr-95	<5.40E+00	0.00E+00	5.40E+00
		Nb-95	<5.13E+00	0.00E+00	5.13E+00
		I-131	<1.96E+02	0.00E+00	1.96E+02
		Cs-134	<1.78E+00	0.00E+00	1.78E+00
		Cs-137	<1.72E+00	0.00E+00	1.72E+00
		BaLa-140	<3.44E+01	0.00E+00	3.44E+01
		Be-7	<2.97E+01	0.00E+00	2.97E+01
		K-40	2.90E+02	1.71E+01	1.79E+01
		H3GW	<3.44E+01	0.00E+00	1.93E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277243	11/13/2013 - 11/13/2013	Mn-54	<7.16E+00	0.00E+00	7.16E+00
		Co-58	<6.65E+00	0.00E+00	6.65E+00
		Fe-59	<1.36E+01	0.00E+00	1.36E+01
		Co-60	<7.73E+00	0.00E+00	7.73E+00
		Zn-65	<1.40E+01	0.00E+00	1.40E+01
		Zr-95	<1.38E+01	0.00E+00	1.38E+01
		Nb-95	<7.58E+00	0.00E+00	7.58E+00
		I-131	<9.73E+00	0.00E+00	9.73E+00
		Cs-134	<6.67E+00	0.00E+00	6.67E+00
		Cs-137	<7.30E+00	0.00E+00	7.30E+00
		BaLa-140	<1.12E+01	0.00E+00	1.12E+01
		Be-7	<5.69E+01	0.00E+00	5.69E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 72 [ INDICATOR - E @ 0.1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277243	11/13/2013 - 11/13/2013	K-40	2.88E+02	4.66E+01	8.38E+01
		H3GW	1.91E+02	4.74E+01	1.44E+02

Sample Point 73 [ INDICATOR - ENE @ 0.11 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177792	2/11/2013 - 2/11/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	5.54E+02	7.95E+01	
		Bi-214	3.42E+01	9.50E+00	
		Pb-214	3.43E+01	8.43E+00	
		Ra-226	8.60E+01	8.02E+01	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177833	2/11/2013 - 2/11/2013	H3GW	6.98E+02	1.31E+02	2.06E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258448	5/14/2013 - 5/14/2013	Mn-54	<4.03E+00	0.00E+00	4.03E+00
		Co-58	<4.65E+00	0.00E+00	4.65E+00
		Fe-59	<1.02E+01	0.00E+00	1.02E+01
		Co-60	<4.07E+00	0.00E+00	4.07E+00
		Zn-65	<8.94E+00	0.00E+00	8.94E+00
		Zr-95	<8.27E+00	0.00E+00	8.27E+00
		Nb-95	<5.22E+00	0.00E+00	5.22E+00
		I-131	<1.45E+01	0.00E+00	1.45E+01
		Cs-134	<4.38E+00	0.00E+00	4.38E+00
		Cs-137	<4.17E+00	0.00E+00	4.17E+00
		BaLa-140	<8.90E+00	0.00E+00	8.90E+00
		Be-7	<3.96E+01	0.00E+00	3.96E+01
		K-40	4.11E+02	2.87E+01	3.98E+01
		H3GW	4.00E+02	6.39E+01	1.89E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271724	8/14/2013 - 8/14/2013	Mn-54	<2.31E+00	0.00E+00	2.31E+00
		Co-58	<3.42E+00	0.00E+00	3.42E+00
		Fe-59	<8.90E+00	0.00E+00	8.90E+00
		Co-60	<2.57E+00	0.00E+00	2.57E+00
		Zn-65	<4.95E+00	0.00E+00	4.95E+00
		Zr-95	<5.92E+00	0.00E+00	5.92E+00
		Nb-95	<5.13E+00	0.00E+00	5.13E+00
		I-131	<9.89E+01	0.00E+00	9.89E+01
		Cs-134	<2.02E+00	0.00E+00	2.02E+00
		Cs-137	<2.25E+00	0.00E+00	2.25E+00
		BaLa-140	<2.80E+01	0.00E+00	2.80E+01
		Be-7	<3.48E+01	0.00E+00	3.48E+01
		K-40	1.18E+02	1.87E+01	2.32E+01
		H3GW	<8.10E+01	0.00E+00	1.85E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277249	11/13/2013 - 11/13/2013	Mn-54	<7.16E+00	0.00E+00	7.16E+00
		Co-58	<6.00E+00	0.00E+00	6.00E+00
		Fe-59	<1.19E+01	0.00E+00	1.19E+01
		Co-60	<6.99E+00	0.00E+00	6.99E+00
		Zn-65	<1.36E+01	0.00E+00	1.36E+01
		Zr-95	<1.30E+01	0.00E+00	1.30E+01
		Nb-95	<7.21E+00	0.00E+00	7.21E+00
		I-131	<9.99E+00	0.00E+00	9.99E+00
		Cs-134	<6.68E+00	0.00E+00	6.68E+00
		Cs-137	<7.55E+00	0.00E+00	7.55E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi

Sample Point 73 [ INDICATOR - ENE @ 0.11 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277249	11/13/2013 - 11/13/2013	BaLa-140	<9.68E+00	0.00E+00	9.68E+00
		Be-7	<6.41E+01	0.00E+00	6.41E+01
		K-40	3.24E+02	5.57E+01	6.44E+01
		H3GW	<1.39E+02	0.00E+00	1.44E+02

Sample Point 75 [ INDICATOR - NE @ 0.05 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177793	2/11/2013 - 2/11/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.44E+02	5.15E+01	
		Tl-208	3.87E+00	2.84E+00	
		Pb-212	7.82E+00	2.68E+00	
		Bi-214	3.94E+01	8.81E+00	
		Pb-214	4.21E+01	8.67E+00	
		Ra-226	2.10E+02	6.34E+01	
		Th-234	2.10E+02	1.19E+02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177834	2/11/2013 - 2/11/2013	H3GW	3.47E+02	1.28E+02	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258447	5/14/2013 - 5/14/2013	Mn-54	<5.73E+00	0.00E+00	5.73E+00
		Co-58	<5.08E+00	0.00E+00	5.08E+00
		Fe-59	<1.06E+01	0.00E+00	1.06E+01
		Co-60	<7.19E+00	0.00E+00	7.19E+00
		Zn-65	<1.12E+01	0.00E+00	1.12E+01
		Zr-95	<9.48E+00	0.00E+00	9.48E+00
		Nb-95	<5.38E+00	0.00E+00	5.38E+00
		I-131	<1.40E+01	0.00E+00	1.40E+01
		Cs-134	<4.09E+00	0.00E+00	4.09E+00
		Cs-137	<4.82E+00	0.00E+00	4.82E+00
		BaLa-140	<1.08E+01	0.00E+00	1.08E+01
		Be-7	<3.76E+01	0.00E+00	3.76E+01
		K-40	1.24E+02	2.23E+01	5.06E+01
		H3GW	<1.40E+02	0.00E+00	1.90E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271723	8/14/2013 - 8/14/2013	Mn-54	<1.79E+00	0.00E+00	1.79E+00
		Co-58	<2.37E+00	0.00E+00	2.37E+00
		Fe-59	<6.10E+00	0.00E+00	6.10E+00
		Co-60	<1.72E+00	0.00E+00	1.72E+00
		Zn-65	<3.57E+00	0.00E+00	3.57E+00
		Zr-95	<4.52E+00	0.00E+00	4.52E+00
		Nb-95	<3.90E+00	0.00E+00	3.90E+00
		I-131	<9.77E+01	0.00E+00	9.77E+01
		Cs-134	<1.57E+00	0.00E+00	1.57E+00
		Cs-137	<1.55E+00	0.00E+00	1.55E+00
		BaLa-140	<2.04E+01	0.00E+00	2.04E+01
		Be-7	<2.51E+01	0.00E+00	2.51E+01
		K-40	3.18E+02	1.48E+01	1.47E+01
		H3GW	<9.21E+01	0.00E+00	1.84E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277256	11/13/2013 - 11/13/2013	Mn-54	<6.01E+00	0.00E+00	6.01E+00
		Co-58	<6.34E+00	0.00E+00	6.34E+00
		Fe-59	<1.10E+01	0.00E+00	1.10E+01
		Co-60	<6.93E+00	0.00E+00	6.93E+00
		Zn-65	<1.44E+01	0.00E+00	1.44E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 75 [ INDICATOR - NE @ 0.05 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277256	11/13/2013 - 11/13/2013	Zr-95	<1.15E+01	0.00E+00	1.15E+01
		Nb-95	<7.09E+00	0.00E+00	7.09E+00
		I-131	<8.86E+00	0.00E+00	8.86E+00
		Cs-134	<5.58E+00	0.00E+00	5.58E+00
		Cs-137	<5.97E+00	0.00E+00	5.97E+00
		BaLa-140	<6.36E+00	0.00E+00	6.36E+00
		Be-7	<4.81E+01	0.00E+00	4.81E+01
		K-40	1.18E+02	3.77E+01	6.75E+01
		H3GW	1.65E+02	4.70E+01	1.45E+02

Sample Point 76 [ INDICATOR - N @ 0.49 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177794	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.10E+02	4.67E+01	
		Ti-208	3.61E+00	2.84E+00	
		Pb-212	7.88E+00	3.18E+00	
		Bi-214	3.23E+01	8.08E+00	
		Pb-214	3.68E+01	8.01E+00	
		Ra-226	1.81E+02	6.83E+01	
		Th-234	2.08E+02	1.06E+02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177835	2/12/2013 - 2/12/2013	H3GW	2.27E+02	1.27E+02	2.06E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258443	5/14/2013 - 5/14/2013	Mn-54	<3.29E+00	0.00E+00	3.29E+00
		Co-58	<3.47E+00	0.00E+00	3.47E+00
		Fe-59	<8.27E+00	0.00E+00	8.27E+00
		Co-60	<4.68E+00	0.00E+00	4.68E+00
		Zn-65	<6.38E+00	0.00E+00	6.38E+00
		Zr-95	<7.18E+00	0.00E+00	7.18E+00
		Nb-95	<4.27E+00	0.00E+00	4.27E+00
		I-131	<1.31E+01	0.00E+00	1.31E+01
		Cs-134	<3.23E+00	0.00E+00	3.23E+00
		Cs-137	<3.50E+00	0.00E+00	3.50E+00
		BaLa-140	<8.00E+00	0.00E+00	8.00E+00
		Be-7	<3.28E+01	0.00E+00	3.28E+01
		K-40	1.31E+02	2.07E+01	3.09E+01
		H3GW	<1.09E+02	0.00E+00	1.90E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271732	8/14/2013 - 8/14/2013	Mn-54	<2.16E+00	0.00E+00	2.16E+00
		Co-58	<3.11E+00	0.00E+00	3.11E+00
		Fe-59	<8.52E+00	0.00E+00	8.52E+00
		Co-60	<2.84E+00	0.00E+00	2.84E+00
		Zn-65	<5.20E+00	0.00E+00	5.20E+00
		Zr-95	<5.38E+00	0.00E+00	5.38E+00
		Nb-95	<5.02E+00	0.00E+00	5.02E+00
		I-131	<8.85E+01	0.00E+00	8.85E+01
		Cs-134	<1.92E+00	0.00E+00	1.92E+00
		Cs-137	<2.37E+00	0.00E+00	2.37E+00
		BaLa-140	<2.82E+01	0.00E+00	2.82E+01
		Be-7	<2.99E+01	0.00E+00	2.99E+01
		K-40	1.32E+02	1.69E+01	1.85E+01
		H3GW	<5.9E+01	0.00E+00	1.93E+02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/

Sample Point 76 [ INDICATOR - N @ 0.49 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277257	11/13/2013 - 11/13/2013	Mn-54	<8.01E+00	0.00E+00	8.01E+00
		Co-58	<6.17E+00	0.00E+00	6.17E+00
		Fe-59	<1.62E+01	0.00E+00	1.62E+01
		Co-60	<6.26E+00	0.00E+00	6.26E+00
		Zn-65	<1.40E+01	0.00E+00	1.40E+01
		Zr-95	<1.21E+01	0.00E+00	1.21E+01
		Nb-95	<8.84E+00	0.00E+00	8.84E+00
		I-131	<1.12E+01	0.00E+00	1.12E+01
		Cs-134	<6.33E+00	0.00E+00	6.33E+00
		Cs-137	<7.99E+00	0.00E+00	7.99E+00
		BaLa-140	<1.17E+01	0.00E+00	1.17E+01
		Be-7	<6.40E+01	0.00E+00	6.40E+01
		K-40	<1.23E+02	0.00E+00	1.23E+02
		H3GW	<3.55E+01	0.00E+00	1.45E+02

Sample Point 77 [ INDICATOR - SSE @ 0.25 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177795	2/11/2013 - 2/11/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	5.83E+02	7.90E+01	
		Tl-208	3.20E+01	5.51E+00	
		Bi-212	6.15E+01	3.26E+01	
		Pb-212	1.02E+02	9.23E+00	
		Bi-214	5.74E+01	9.53E+00	
		Pb-214	4.64E+01	1.00E+01	
		Ra-226	2.04E+02	9.75E+01	
		Ac-228	2.42E+01	1.34E+01	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177836	2/11/2013 - 2/11/2013	H3GW	4.18E+02	1.28E+02	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258444	5/15/2013 - 5/15/2013	Mn-54	<3.81E+00	0.00E+00	3.81E+00
		Co-58	<4.22E+00	0.00E+00	4.22E+00
		Fe-59	<8.26E+00	0.00E+00	8.26E+00
		Co-60	<5.00E+00	0.00E+00	5.00E+00
		Zn-65	<8.54E+00	0.00E+00	8.54E+00
		Zr-95	<7.83E+00	0.00E+00	7.83E+00
		Nb-95	<5.00E+00	0.00E+00	5.00E+00
		I-131	<1.18E+01	0.00E+00	1.18E+01
		Cs-134	<3.86E+00	0.00E+00	3.86E+00
		Cs-137	<4.51E+00	0.00E+00	4.51E+00
		BaLa-140	<8.36E+00	0.00E+00	8.36E+00
		Be-7	<3.48E+01	0.00E+00	3.48E+01
		K-40	3.66E+02	3.62E+01	3.96E+01
		H3GW	<1.32E+02	0.00E+00	1.80E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271731	8/14/2013 - 8/14/2013	Mn-54	<2.35E+00	0.00E+00	2.35E+00
		Co-58	<3.32E+00	0.00E+00	3.32E+00
		Fe-59	<7.97E+00	0.00E+00	7.97E+00
		Co-60	<2.81E+00	0.00E+00	2.81E+00
		Zn-65	<5.10E+00	0.00E+00	5.10E+00
		Zr-95	<6.75E+00	0.00E+00	6.75E+00
		Nb-95	<5.56E+00	0.00E+00	5.56E+00
		I-131	<1.25E+02	0.00E+00	1.25E+02
		Cs-134	<2.24E+00	0.00E+00	2.24E+00
		Cs-137	<2.40E+00	0.00E+00	2.40E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 77 [ INDICATOR - SSE @ 0.25 miles ]

Sample ID:	271731	Sample Dates:	8/14/2013 - 8/14/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				BaLa-140	<3.01E+01	0.00E+00	3.01E+01
				Be-7	<3.02E+01	0.00E+00	3.02E+01
				K-40	1.06E+02	1.37E+01	2.26E+01
				H3GW	<8.55E+01	0.00E+00	1.92E+02

Sample ID:	277259	Sample Dates:	11/13/2013 - 11/13/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Mn-54	<6.39E+00	0.00E+00	6.39E+00
				Co-58	<6.65E+00	0.00E+00	6.65E+00
				Fe-59	<1.75E+01	0.00E+00	1.75E+01
				Co-60	<9.09E+00	0.00E+00	9.09E+00
				Zn-65	<1.45E+01	0.00E+00	1.45E+01
				Zr-95	<1.33E+01	0.00E+00	1.33E+01
				Nb-95	<6.78E+00	0.00E+00	6.78E+00
				I-131	<1.07E+01	0.00E+00	1.07E+01
				Cs-134	<6.18E+00	0.00E+00	6.18E+00
				Cs-137	<8.18E+00	0.00E+00	8.18E+00
				BaLa-140	<8.40E+00	0.00E+00	8.40E+00
				Be-7	<5.67E+01	0.00E+00	5.67E+01
				K-40	2.28E+02	3.61E+01	4.28E+01
				H3GW	<7.19E+01	0.00E+00	2.18E+02

Sample Point 78 [ INDICATOR - SSE @ 0.17 miles ]

Sample ID:	177796	Sample Dates:	2/11/2013 - 2/11/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Mn-54	<1.50E+01	0.00E+00	1.50E+01
				Co-58	<1.50E+01	0.00E+00	1.50E+01
				Fe-59	<3.00E+01	0.00E+00	3.00E+01
				Co-60	<1.50E+01	0.00E+00	1.50E+01
				Zn-65	<3.00E+01	0.00E+00	3.00E+01
				Zr-95	<1.50E+01	0.00E+00	1.50E+01
				Nb-95	<1.50E+01	0.00E+00	1.50E+01
				I-131	<1.50E+01	0.00E+00	1.50E+01
				Cs-134	<1.50E+01	0.00E+00	1.50E+01
				Cs-137	<1.80E+01	0.00E+00	1.80E+01
				BaLa-140	<1.50E+01	0.00E+00	1.50E+01
				K-40	2.06E+02	4.97E+01	
				Tl-208	1.79E+01	4.12E+00	
				Pb-212	4.93E+01	7.80E+00	
				Bi-214	2.77E+01	8.38E+00	
				Pb-214	3.18E+01	8.55E+00	
				Ra-226	2.82E+02	7.58E+01	
				Ac-228	6.25E+01	1.55E+01	
				Th-234	2.59E+02	1.14E+02	

Sample ID:	177837	Sample Dates:	2/11/2013 - 2/11/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				H3GW	4.60E+02	1.28E+02	2.05E+02

Sample ID:	258445	Sample Dates:	5/15/2013 - 5/15/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Mn-54	<4.72E+00	0.00E+00	4.72E+00
				Co-58	<4.02E+00	0.00E+00	4.02E+00
				Fe-59	<1.04E+01	0.00E+00	1.04E+01
				Co-60	<5.02E+00	0.00E+00	5.02E+00
				Zn-65	<9.96E+00	0.00E+00	9.96E+00
				Zr-95	<9.12E+00	0.00E+00	9.12E+00
				Nb-95	<4.93E+00	0.00E+00	4.93E+00
				I-131	<1.42E+01	0.00E+00	1.42E+01
				Cs-134	<4.31E+00	0.00E+00	4.31E+00
				Cs-137	<4.60E+00	0.00E+00	4.60E+00
				BaLa-140	<9.01E+00	0.00E+00	9.01E+00
				Be-7	<4.16E+01	0.00E+00	4.16E+01
				K-40	3.76E+02	3.56E+01	4.44E+01
				H3GW	<1.59E+02	0.00E+00	1.82E+02

Sample ID:	271726	Sample Dates:	8/14/2013 - 8/14/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Mn-54	<2.60E+00	0.00E+00	2.60E+00
				Co-58	<3.74E+00	0.00E+00	3.74E+00
				Fe-59	<9.34E+00	0.00E+00	9.34E+00
				Co-60	<2.54E+00	0.00E+00	2.54E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/

Sample Point 78 [ INDICATOR - SSE @ 0.17 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271726	8/14/2013 - 8/14/2013	Zn-65	<6.07E+00	0.00E+00	6.07E+00
		Zr-95	<6.56E+00	0.00E+00	6.56E+00
		Nb-95	<6.88E+00	0.00E+00	6.88E+00
		I-131	<1.49E+02	0.00E+00	1.49E+02
		Cs-134	<2.42E+00	0.00E+00	2.42E+00
		Cs-137	<2.63E+00	0.00E+00	2.63E+00
		BaLa-140	<3.77E+01	0.00E+00	3.77E+01
		Be-7	<3.58E+01	0.00E+00	3.58E+01
		K-40	1.80E+02	2.02E+01	2.41E+01
		H3GW	1.95E+02	5.94E+01	1.85E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277260	11/13/2013 - 11/13/2013	Mn-54	<7.88E+00	0.00E+00	7.88E+00
		Co-58	<5.78E+00	0.00E+00	5.78E+00
		Fe-59	<1.57E+01	0.00E+00	1.57E+01
		Co-60	<8.24E+00	0.00E+00	8.24E+00
		Zn-65	<1.55E+01	0.00E+00	1.55E+01
		Zr-95	<1.26E+01	0.00E+00	1.26E+01
		Nb-95	<8.04E+00	0.00E+00	8.04E+00
		I-131	<1.08E+01	0.00E+00	1.08E+01
		Cs-134	<6.07E+00	0.00E+00	6.07E+00
		Cs-137	<7.07E+00	0.00E+00	7.07E+00
		BaLa-140	<9.53E+00	0.00E+00	9.53E+00
		Be-7	<5.90E+01	0.00E+00	5.90E+01
		K-40	2.89E+02	5.78E+01	8.29E+01
		H3GW	2.69E+02	7.04E+01	2.16E+02

## Sample Point 79 [ INDICATOR - N @ 1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177797	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	4.47E+02	6.79E+01	
		Tl-208	8.24E+00	3.23E+00	
		Pb-212	2.04E+01	5.66E+00	
		Bi-214	2.63E+01	7.48E+00	
		Pb-214	2.04E+01	8.02E+00	
		Ra-226	1.48E+02	7.45E+01	
		Ac-228	2.44E+01	1.16E+01	
		Th-234	2.48E+02	1.22E+02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177838	2/12/2013 - 2/12/2013	H3GW	1.69E+03	1.39E+02	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258441	5/14/2013 - 5/14/2013	Mn-54	<2.94E+00	0.00E+00	2.94E+00
		Co-58	<3.10E+00	0.00E+00	3.10E+00
		Fe-59	<6.29E+00	0.00E+00	6.29E+00
		Co-60	<3.41E+00	0.00E+00	3.41E+00
		Zn-65	<5.82E+00	0.00E+00	5.82E+00
		Zr-95	<5.04E+00	0.00E+00	5.04E+00
		Nb-95	<3.63E+00	0.00E+00	3.63E+00
		I-131	<1.16E+01	0.00E+00	1.16E+01
		Cs-134	<2.79E+00	0.00E+00	2.79E+00
		Cs-137	<3.13E+00	0.00E+00	3.13E+00
		BaLa-140	<7.47E+00	0.00E+00	7.47E+00
		Be-7	<2.49E+01	0.00E+00	2.49E+01
		K-40	3.68E+02	2.35E+01	2.54E+01
		H3GW	1.31E+03	7.46E+01	1.80E+02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 79 [ INDICATOR - N @ 1 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
271728	8/14/2013 - 8/14/2013	Mn-54	<2.82E+00	0.00E+00	2.82E+00
		Co-58	<3.79E+00	0.00E+00	3.79E+00
		Fe-59	<1.22E+01	0.00E+00	1.22E+01
		Co-60	<2.91E+00	0.00E+00	2.91E+00
		Zn-65	<6.70E+00	0.00E+00	6.70E+00
		Zr-95	<8.13E+00	0.00E+00	8.13E+00
		Nb-95	<8.20E+00	0.00E+00	8.20E+00
		I-131	<2.53E+02	0.00E+00	2.53E+02
		Cs-134	<2.74E+00	0.00E+00	2.74E+00
		Cs-137	<2.88E+00	0.00E+00	2.88E+00
		BaLa-140	<5.55E+01	0.00E+00	5.55E+01
		Be-7	<3.90E+01	0.00E+00	3.90E+01
		K-40	1.73E+02	1.99E+01	2.64E+01
		H3GW	1.29E+03	7.57E+01	1.86E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277261	11/12/2013 - 11/12/2013	Mn-54	<7.39E+00	0.00E+00	7.39E+00
		Co-58	<8.31E+00	0.00E+00	8.31E+00
		Fe-59	<1.53E+01	0.00E+00	1.53E+01
		Co-60	<6.90E+00	0.00E+00	6.90E+00
		Zn-65	<1.68E+01	0.00E+00	1.68E+01
		Zr-95	<1.40E+01	0.00E+00	1.40E+01
		Nb-95	<6.25E+00	0.00E+00	6.25E+00
		I-131	<1.35E+01	0.00E+00	1.35E+01
		Cs-134	<7.23E+00	0.00E+00	7.23E+00
		Cs-137	<4.94E+00	0.00E+00	4.94E+00
		BaLa-140	<1.19E+01	0.00E+00	1.19E+01
		Be-7	<6.44E+01	0.00E+00	6.44E+01
		K-40	3.78E+02	5.22E+01	6.84E+01
		H3GW	1.54E+03	8.87E+01	2.14E+02

Sample Point 81 [ INDICATOR - SSE @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177798	2/11/2013 - 2/11/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	4.62E+02	7.03E+01	
		Pb-212	1.30E+01	8.07E+00	
		Bi-214	1.28E+02	1.49E+01	
		Pb-214	1.12E+02	1.27E+01	
		Ra-226	1.69E+02	8.56E+01	
		Th-234	1.54E+02	1.24E+02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177839	2/11/2013 - 2/11/2013	H3GW	6.13E+02	1.30E+02	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258440	5/15/2013 - 5/15/2013	Mn-54	<4.70E+00	0.00E+00	4.70E+00
		Co-58	<5.56E+00	0.00E+00	5.56E+00
		Fe-59	<1.25E+01	0.00E+00	1.25E+01
		Co-60	<8.01E+00	0.00E+00	8.01E+00
		Zn-65	<1.01E+01	0.00E+00	1.01E+01
		Zr-95	<8.65E+00	0.00E+00	8.65E+00
		Nb-95	<6.08E+00	0.00E+00	6.08E+00
		I-131	<1.45E+01	0.00E+00	1.45E+01
		Cs-134	<4.89E+00	0.00E+00	4.89E+00
		Cs-137	<5.45E+00	0.00E+00	5.45E+00
		BaLa-140	<1.20E+01	0.00E+00	1.20E+01
		Be-7	<3.98E+01	0.00E+00	3.98E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/l

Sample Point 81 [ INDICATOR - SSE @ 0.19 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258440	5/15/2013 - 5/15/2013	K-40	1.24E+02	2.79E+01	5.36E+01
		H3GW	1.92E+02	5.85E+01	1.82E+02
271725	8/14/2013 - 8/14/2013	Mn-54	<2.20E+00	0.00E+00	2.20E+00
		Co-58	<2.98E+00	0.00E+00	2.98E+00
		Fe-59	<8.89E+00	0.00E+00	8.89E+00
		Co-60	<2.90E+00	0.00E+00	2.90E+00
		Zn-65	<4.85E+00	0.00E+00	4.85E+00
		Zr-95	<5.63E+00	0.00E+00	5.63E+00
		Nb-95	<5.61E+00	0.00E+00	5.61E+00
		I-131	<1.29E+02	0.00E+00	1.29E+02
		Cs-134	<2.07E+00	0.00E+00	2.07E+00
		Cs-137	<2.35E+00	0.00E+00	2.35E+00
		BaLa-140	<3.34E+01	0.00E+00	3.34E+01
		Be-7	<2.98E+01	0.00E+00	2.98E+01
		K-40	1.00E+02	1.60E+01	2.50E+01
H3GW	1.06E+03	7.24E+01	1.85E+02		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
277262	11/13/2013 - 11/13/2013	Mn-54	<6.67E+00	0.00E+00	6.67E+00
		Co-58	<7.15E+00	0.00E+00	7.15E+00
		Fe-59	<1.31E+01	0.00E+00	1.31E+01
		Co-60	<9.16E+00	0.00E+00	9.16E+00
		Zn-65	<1.65E+01	0.00E+00	1.65E+01
		Zr-95	<1.36E+01	0.00E+00	1.36E+01
		Nb-95	<9.33E+00	0.00E+00	9.33E+00
		I-131	<1.20E+01	0.00E+00	1.20E+01
		Cs-134	<7.59E+00	0.00E+00	7.59E+00
		Cs-137	<7.92E+00	0.00E+00	7.92E+00
		BaLa-140	<1.39E+01	0.00E+00	1.39E+01
		Be-7	<5.90E+01	0.00E+00	5.90E+01
		K-40	3.68E+02	5.01E+01	7.76E+01
H3GW	6.12E+02	7.57E+01	2.15E+02		

## Sample Point 82 [ INDICATOR - SSE @ 0.3 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177745	2/12/2013 - 2/12/2013	LLI-131	<3.09E-01	0.00E+00	3.09E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177791	2/12/2013 - 2/12/2013	Beta	3.04E+00	6.70E-01	6.26E-01

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177799	2/12/2013 - 2/12/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	5.45E+02	7.45E+01	
		Bi-214	2.42E+01	7.45E+00	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177840	2/12/2013 - 2/12/2013	H3GW	<2.05E+02	0.00E+00	2.05E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258439	5/15/2013 - 5/15/2013	Beta	1.39E+00	3.77E-01	1.17E+00
		Mn-54	<4.62E+00	0.00E+00	4.62E+00
		Co-58	<4.80E+00	0.00E+00	4.80E+00
		Fe-59	<1.10E+01	0.00E+00	1.10E+01
		Co-60	<6.32E+00	0.00E+00	6.32E+00
		Zn-65	<8.01E+00	0.00E+00	8.01E+00
Zr-95	<7.50E+00	0.00E+00	7.50E+00		

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: GROUND WATER Concentration (Activity): pCi/

Sample Point 82 [ INDICATOR - SSE @ 0.3 miles ]

Sample ID:	258439	Sample Dates:	5/15/2013 - 5/15/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Nb-95	<5.84E+00	0.00E+00	5.84E+00
				I-131	<1.38E+01	0.00E+00	1.38E+01
				Cs-134	<3.96E+00	0.00E+00	3.96E+00
				Cs-137	<5.77E+00	0.00E+00	5.77E+00
				BaLa-140	<1.28E+01	0.00E+00	1.28E+01
				Be-7	<3.73E+01	0.00E+00	3.73E+01
				K-40	1.39E+02	3.10E+01	4.55E+01
				Be-7	<2.43E+00	0.00E+00	2.43E+00
				K-40	1.93E+01	2.39E+00	2.94E+00
				LLI-131	<5.27E-01	0.00E+00	5.27E-01
				H3GW	<-5.4E+01	0.00E+00	1.81E+02

Sample ID:	271722	Sample Dates:	8/15/2013 - 8/15/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Beta	1.29E+00	3.74E-01	1.17E+00
				Mn-54	<2.19E+00	0.00E+00	2.19E+00
				Co-58	<3.25E+00	0.00E+00	3.25E+00
				Fe-59	<7.94E+00	0.00E+00	7.94E+00
				Co-60	<2.42E+00	0.00E+00	2.42E+00
				Zn-65	<4.64E+00	0.00E+00	4.64E+00
				Zr-95	<5.41E+00	0.00E+00	5.41E+00
				Nb-95	<4.98E+00	0.00E+00	4.98E+00
				I-131	<1.19E+02	0.00E+00	1.19E+02
				Cs-134	<2.02E+00	0.00E+00	2.02E+00
				Cs-137	<2.06E+00	0.00E+00	2.06E+00
				BaLa-140	<3.23E+01	0.00E+00	3.23E+01
				Be-7	<2.79E+01	0.00E+00	2.79E+01
				K-40	8.92E+01	1.26E+01	1.93E+01
				Be-7	<4.49E+00	0.00E+00	4.49E+00
				K-40	4.95E+01	3.41E+00	3.37E+00
				LLI-131	<1.20E+01	0.00E+00	1.20E+01
				H3GW	<-7.1E+00	0.00E+00	1.85E+02

Sample ID:	277255	Sample Dates:	11/14/2013 - 11/14/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Beta	1.52E+00	3.78E-01	1.16E+00
				Mn-54	<7.55E+00	0.00E+00	7.55E+00
				Co-58	<6.96E+00	0.00E+00	6.96E+00
				Fe-59	<1.25E+01	0.00E+00	1.25E+01
				Co-60	<1.25E+01	0.00E+00	1.25E+01
				Zn-65	<1.85E+01	0.00E+00	1.85E+01
				Zr-95	<1.39E+01	0.00E+00	1.39E+01
				Nb-95	<8.83E+00	0.00E+00	8.83E+00
				I-131	<1.27E+01	0.00E+00	1.27E+01
				Cs-134	<7.04E+00	0.00E+00	7.04E+00
				Cs-137	<9.71E+00	0.00E+00	9.71E+00
				BaLa-140	<1.33E+01	0.00E+00	1.33E+01
				Be-7	<7.30E+01	0.00E+00	7.30E+01
				K-40	2.70E+02	6.84E+01	1.16E+02
				Be-7	<3.01E+00	0.00E+00	3.01E+00
				K-40	3.69E+01	3.09E+00	4.65E+00
				LLI-131	<5.75E-01	0.00E+00	5.75E-01
				H3GW	<-1.7E+01	0.00E+00	2.16E+02

Media Type: SEDIMENT\_BOTTOM Concentration (Activity): pCi/kg

Sample Point 41 [ CONTROL - NNW @ 7.2 miles ]

Sample ID:	259472	Sample Dates:	5/30/2013 - 5/30/2013	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
				Mn-54	<1.85E+01	0.00E+00	1.85E+01
				Co-58	<2.14E+01	0.00E+00	2.14E+01
				Fe-59	<4.13E+01	0.00E+00	4.13E+01
				Co-60	<2.30E+01	0.00E+00	2.30E+01
				Zn-65	<4.20E+01	0.00E+00	4.20E+01
				Zr-95	<4.52E+01	0.00E+00	4.52E+01
				Nb-95	<2.73E+01	0.00E+00	2.73E+01
				I-131	<5.27E+01	0.00E+00	5.27E+01
				Cs-134	<1.91E+01	0.00E+00	1.91E+01
				Cs-137	1.69E+02	1.18E+01	2.04E+01
				Be-7	<2.10E+02	0.00E+00	2.10E+02

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SEDIMENT\_BOTTOM Concentration (Activity): pCi/kg

## Sample Point 41 [ CONTROL - NNW @ 7.2 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259472	5/30/2013 - 5/30/2013	K-40	3.23E+03	1.74E+02	2.02E+02
		Co-57	<1.53E+01	0.00E+00	1.53E+01
		Mo-99	<3.27E+03	0.00E+00	3.27E+03
		Ag-110M	<1.97E+01	0.00E+00	1.97E+01
		Sb-122	<6.16E+02	0.00E+00	6.16E+02
		Sb-125	<5.52E+01	0.00E+00	5.52E+01

## Sample Point 45 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259470	5/30/2013 - 5/30/2013	Mn-54	<1.08E+01	0.00E+00	1.08E+01
		Co-58	<1.18E+01	0.00E+00	1.18E+01
		Fe-59	<1.92E+01	0.00E+00	1.92E+01
		Co-60	<1.40E+01	0.00E+00	1.40E+01
		Zn-65	<2.01E+01	0.00E+00	2.01E+01
		Zr-95	<2.29E+01	0.00E+00	2.29E+01
		Nb-95	<1.36E+01	0.00E+00	1.36E+01
		I-131	<2.27E+01	0.00E+00	2.27E+01
		Cs-134	<9.97E+00	0.00E+00	9.97E+00
		Cs-137	<1.22E+01	0.00E+00	1.22E+01
		Be-7	<1.21E+02	0.00E+00	1.21E+02
		K-40	5.35E+02	6.18E+01	9.28E+01
		Co-57	<9.07E+00	0.00E+00	9.07E+00
		Mo-99	<1.19E+03	0.00E+00	1.19E+03
		Ag-110M	<1.20E+01	0.00E+00	1.20E+01
		Sb-122	<2.61E+02	0.00E+00	2.61E+02
		Sb-125	<2.94E+01	0.00E+00	2.94E+01

## Sample Point 46 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259471	5/31/2013 - 5/31/2013	Mn-54	<5.37E+01	0.00E+00	5.37E+01
		Co-58	<4.46E+01	0.00E+00	4.46E+01
		Fe-59	<8.18E+01	0.00E+00	8.18E+01
		Co-60	<7.37E+01	0.00E+00	7.37E+01
		Zn-65	<9.63E+01	0.00E+00	9.63E+01
		Zr-95	<8.18E+01	0.00E+00	8.18E+01
		Nb-95	<5.03E+01	0.00E+00	5.03E+01
		I-131	<9.33E+01	0.00E+00	9.33E+01
		Cs-134	<3.72E+01	0.00E+00	3.72E+01
		Cs-137	3.68E+02	3.36E+01	4.65E+01
		Be-7	<3.64E+02	0.00E+00	3.64E+02
		K-40	3.09E+03	3.11E+02	4.19E+02
		Co-57	<2.43E+01	0.00E+00	2.43E+01
		Mo-99	<4.39E+03	0.00E+00	4.39E+03
		Ag-110M	<4.22E+01	0.00E+00	4.22E+01
		Sb-122	<7.61E+02	0.00E+00	7.61E+02
		Sb-125	<1.18E+02	0.00E+00	1.18E+02

## Sample Point 66 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259473	5/31/2013 - 5/31/2013	Mn-54	<3.81E+01	0.00E+00	3.81E+01
		Co-58	<3.01E+01	0.00E+00	3.01E+01
		Fe-59	<7.74E+01	0.00E+00	7.74E+01
		Co-60	<2.75E+01	0.00E+00	2.75E+01
		Zn-65	<6.78E+01	0.00E+00	6.78E+01
		Zr-95	<7.44E+01	0.00E+00	7.44E+01
		Nb-95	<4.01E+01	0.00E+00	4.01E+01
		I-131	<8.20E+01	0.00E+00	8.20E+01
		Cs-134	<3.17E+01	0.00E+00	3.17E+01
		Cs-137	<4.15E+01	0.00E+00	4.15E+01
		Be-7	2.64E+02	1.39E+02	2.78E+02
		K-40	1.91E+03	2.35E+02	2.59E+02
		Co-57	<2.64E+01	0.00E+00	2.64E+01
		Mo-99	<6.10E+03	0.00E+00	6.10E+03
		Ag-110M	<2.92E+01	0.00E+00	2.92E+01
		Sb-122	<1.11E+03	0.00E+00	1.11E+03

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SEDIMENT\_BOTTOM Concentration (Activity): pCi/kg

Sample Point 66 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
259473	5/31/2013 - 5/31/2013	Sb-125	<9.88E+01	0.00E+00	9.88E+01

Media Type: SEDIMENT\_SHORE Concentration (Activity): pCi/kg

Sample Point 44 [ INDICATOR - NNE @ 1.6 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177824	2/18/2013 - 2/18/2013	Cs-134	<1.50E+02	0.00E+00	1.50E+02
		Cs-137	<1.80E+02	0.00E+00	1.80E+02
		Tl-208	3.88E+01	1.75E+01	
		Pb-212	1.04E+02	3.78E+01	
		Bi-214	1.31E+02	4.19E+01	
		Pb-214	1.68E+02	4.31E+01	
		Ac-228	9.74E+01	4.76E+01	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
267542	8/20/2013 - 8/20/2013	Mn-54	<8.26E+00	0.00E+00	8.26E+00
		Co-58	<8.01E+00	0.00E+00	8.01E+00
		Fe-59	<1.72E+01	0.00E+00	1.72E+01
		Co-60	<1.19E+01	0.00E+00	1.19E+01
		Zn-65	<2.01E+01	0.00E+00	2.01E+01
		Zr-95	<1.62E+01	0.00E+00	1.62E+01
		Nb-95	<8.51E+00	0.00E+00	8.51E+00
		I-131	<1.29E+01	0.00E+00	1.29E+01
		Cs-134	<8.24E+00	0.00E+00	8.24E+00
		Cs-137	<9.19E+00	0.00E+00	9.19E+00
		Be-7	1.15E+02	3.83E+01	6.63E+01
		K-40	1.98E+02	5.93E+01	9.91E+01
		Co-57	<7.37E+00	0.00E+00	7.37E+00
		Mo-99	<2.85E+02	0.00E+00	2.85E+02
		Ag-110M	<6.56E+00	0.00E+00	6.56E+00
		Sb-122	<5.34E+01	0.00E+00	5.34E+01
		Sb-125	<2.36E+01	0.00E+00	2.36E+01

Sample Point 57 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177825	2/18/2013 - 2/18/2013	Cs-134	<1.50E+02	0.00E+00	1.50E+02
		Cs-137	<1.80E+02	0.00E+00	1.80E+02
		K-40	1.40E+04	1.53E+03	
		Tl-208	4.10E+02	7.32E+01	
		Bi-212	1.19E+03	4.30E+02	
		Pb-212	1.52E+03	3.30E+02	
		Bi-214	1.40E+03	1.83E+02	
		Pb-214	1.61E+03	1.79E+02	
		Ra-226	3.35E+03	1.19E+03	
		Ac-228	1.44E+03	2.58E+02	

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
267543	8/20/2013 - 8/20/2013	Mn-54	<2.03E+01	0.00E+00	2.03E+01
		Co-58	<1.62E+01	0.00E+00	1.62E+01
		Fe-59	<4.14E+01	0.00E+00	4.14E+01
		Co-60	<1.89E+01	0.00E+00	1.89E+01
		Zn-65	<4.61E+01	0.00E+00	4.61E+01
		Zr-95	<3.54E+01	0.00E+00	3.54E+01
		Nb-95	<2.24E+01	0.00E+00	2.24E+01
		I-131	<2.51E+01	0.00E+00	2.51E+01
		Cs-134	<1.57E+01	0.00E+00	1.57E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		Be-7	<1.45E+02	0.00E+00	1.45E+02
		K-40	1.20E+04	3.17E+02	1.87E+02
		Co-57	<1.32E+01	0.00E+00	1.32E+01
		Mo-99	<5.75E+02	0.00E+00	5.75E+02
		Ag-110M	<1.62E+01	0.00E+00	1.62E+01
		Sb-122	<1.05E+02	0.00E+00	1.05E+02
		Sb-125	<4.47E+01	0.00E+00	4.47E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 40 [ INDICATOR - ESE @ 0.6 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177721	1/21/2013 - 1/21/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.61E+02	2.78E+01	
		Tl-208	2.42E+00	1.36E+00	
		Pb-212	6.56E+00	2.52E+00	
		Bi-214	1.74E+01	3.24E+00	
		Pb-214	1.35E+01	3.21E+00	
		Ra-226	1.50E+02	3.16E+01	
		Ac-228	8.27E+00	5.53E+00	
		Th-234	2.18E+02	4.82E+01	
		177787	1/21/2013 - 1/21/2013	H3SW	1.12E+03
177909	2/18/2013 - 2/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.61E+02	2.71E+01	
		Tl-208	2.81E+00	1.66E+00	
		Pb-212	8.30E+00	1.32E+00	
		Bi-214	1.47E+01	3.11E+00	
		Pb-214	1.87E+01	3.25E+00	
		Ra-226	2.03E+02	3.23E+01	
		Ac-228	8.07E+00	4.00E+00	
		Th-234	1.90E+02	5.10E+01	
		177922	2/18/2013 - 2/18/2013	H3SW	8.48E+02
178040	3/18/2013 - 3/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.27E+02	2.60E+01	
		Tl-208	2.56E+00	1.31E+00	
		Pb-212	4.63E+00	2.18E+00	
		Bi-214	1.65E+01	3.30E+00	
		Pb-214	1.35E+01	3.19E+00	
		Ra-226	1.69E+02	3.11E+01	
		Th-234	1.72E+02	4.72E+01	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 40 [ INDICATOR - ESE @ 0.6 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
178103	3/18/2013 - 3/18/2013	H3SW	7.30E+02	1.31E+02	2.05E+02
258036	4/3/2013 - 5/6/2013	Mn-54	<1.70E+00	0.00E+00	1.70E+00
		Co-58	<1.85E+00	0.00E+00	1.85E+00
		Fe-59	<4.03E+00	0.00E+00	4.03E+00
		Co-60	<1.69E+00	0.00E+00	1.69E+00
		Zn-65	<3.49E+00	0.00E+00	3.49E+00
		Zr-95	<3.42E+00	0.00E+00	3.42E+00
		Nb-95	<2.35E+00	0.00E+00	2.35E+00
		I-131	<1.40E+01	0.00E+00	1.40E+01
		Cs-134	<1.54E+00	0.00E+00	1.54E+00
		Cs-137	<1.74E+00	0.00E+00	1.74E+00
		BaLa-140	<6.10E+00	0.00E+00	6.10E+00
		Be-7	<1.86E+01	0.00E+00	1.86E+01
		K-40	1.45E+02	1.54E+01	1.59E+01
		H3SW	7.77E+02	6.96E+01	1.90E+02
259648	5/6/2013 - 6/3/2013	Mn-54	<2.26E+00	0.00E+00	2.26E+00
		Co-58	<2.66E+00	0.00E+00	2.66E+00
		Fe-59	<6.25E+00	0.00E+00	6.25E+00
		Co-60	<2.63E+00	0.00E+00	2.63E+00
		Zn-65	<4.41E+00	0.00E+00	4.41E+00
		Zr-95	<4.82E+00	0.00E+00	4.82E+00
		Nb-95	<3.44E+00	0.00E+00	3.44E+00
		I-131	<1.34E+01	0.00E+00	1.34E+01
		Cs-134	<2.14E+00	0.00E+00	2.14E+00
		Cs-137	<2.40E+00	0.00E+00	2.40E+00
		BaLa-140	<8.20E+00	0.00E+00	8.20E+00
		Be-7	<2.29E+01	0.00E+00	2.29E+01
		K-40	1.84E+02	1.59E+01	1.82E+01
		H3SW	7.32E+02	6.27E+01	1.66E+02
262877	6/6/2013 - 7/1/2013	Mn-54	<2.00E+00	0.00E+00	2.00E+00
		Co-58	<2.34E+00	0.00E+00	2.34E+00
		Fe-59	<4.82E+00	0.00E+00	4.82E+00
		Co-60	<1.92E+00	0.00E+00	1.92E+00
		Zn-65	<4.19E+00	0.00E+00	4.19E+00
		Zr-95	<4.48E+00	0.00E+00	4.48E+00
		Nb-95	<3.08E+00	0.00E+00	3.08E+00
		I-131	<1.42E+01	0.00E+00	1.42E+01
		Cs-134	<1.86E+00	0.00E+00	1.86E+00
		Cs-137	<2.08E+00	0.00E+00	2.08E+00
		BaLa-140	<7.22E+00	0.00E+00	7.22E+00
		Be-7	<2.38E+01	0.00E+00	2.38E+01
		K-40	1.71E+02	1.66E+01	1.98E+01
		H3SW	1.81E+03	8.10E+01	1.79E+02
265321	7/1/2013 - 8/5/2013	Mn-54	<2.63E+00	0.00E+00	2.63E+00
		Co-58	<2.85E+00	0.00E+00	2.85E+00
		Fe-59	<6.33E+00	0.00E+00	6.33E+00
		Co-60	<3.51E+00	0.00E+00	3.51E+00
		Zn-65	<6.37E+00	0.00E+00	6.37E+00
		Zr-95	<5.74E+00	0.00E+00	5.74E+00
		Nb-95	<3.36E+00	0.00E+00	3.36E+00
		I-131	<1.32E+01	0.00E+00	1.32E+01
		Cs-134	<2.54E+00	0.00E+00	2.54E+00
		Cs-137	<3.19E+00	0.00E+00	3.19E+00
		BaLa-140	<8.03E+00	0.00E+00	8.03E+00
		Be-7	<2.67E+01	0.00E+00	2.67E+01
		K-40	8.98E+01	1.31E+01	2.37E+01
		H3SW	3.85E+03	9.93E+01	1.68E+02
269708	8/5/2013 - 9/3/2013	Mn-54	<1.88E+00	0.00E+00	1.88E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 40 [ INDICATOR - ESE @ 0.6 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
269708	8/5/2013 - 9/3/2013	Co-58	<1.84E+00	0.00E+00	1.84E+00
		Fe-59	<5.48E+00	0.00E+00	5.48E+00
		Co-60	<2.11E+00	0.00E+00	2.11E+00
		Zn-65	<4.08E+00	0.00E+00	4.08E+00
		Zr-95	<4.40E+00	0.00E+00	4.40E+00
		Nb-95	<2.88E+00	0.00E+00	2.88E+00
		I-131	<1.10E+01	0.00E+00	1.10E+01
		Cs-134	<1.65E+00	0.00E+00	1.65E+00
		Cs-137	<2.01E+00	0.00E+00	2.01E+00
		BaLa-140	<8.25E+00	0.00E+00	8.25E+00
		Be-7	<1.76E+01	0.00E+00	1.76E+01
		K-40	7.26E+01	1.05E+01	1.77E+01
		H3SW	4.54E+03	1.10E+02	1.88E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272780	9/3/2013 - 10/7/2013	Mn-54	<2.14E+00	0.00E+00	2.14E+00
		Co-58	<2.44E+00	0.00E+00	2.44E+00
		Fe-59	<5.00E+00	0.00E+00	5.00E+00
		Co-60	<2.47E+00	0.00E+00	2.47E+00
		Zn-65	<4.41E+00	0.00E+00	4.41E+00
		Zr-95	<4.96E+00	0.00E+00	4.96E+00
		Nb-95	<3.36E+00	0.00E+00	3.36E+00
		I-131	<1.38E+01	0.00E+00	1.38E+01
		Cs-134	<2.03E+00	0.00E+00	2.03E+00
		Cs-137	<2.21E+00	0.00E+00	2.21E+00
		BaLa-140	<5.68E+00	0.00E+00	5.68E+00
		Be-7	<2.47E+01	0.00E+00	2.47E+01
		K-40	1.60E+02	1.79E+01	1.96E+01
		H3SW	4.91E+03	1.14E+02	1.83E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
275211	10/7/2013 - 11/4/2013	Mn-54	<3.29E+00	0.00E+00	3.29E+00
		Co-58	<3.61E+00	0.00E+00	3.61E+00
		Fe-59	<8.10E+00	0.00E+00	8.10E+00
		Co-60	<3.63E+00	0.00E+00	3.63E+00
		Zn-65	<7.24E+00	0.00E+00	7.24E+00
		Zr-95	<6.77E+00	0.00E+00	6.77E+00
		Nb-95	<5.14E+00	0.00E+00	5.14E+00
		I-131	<1.45E+01	0.00E+00	1.45E+01
		Cs-134	<3.15E+00	0.00E+00	3.15E+00
		Cs-137	<3.72E+00	0.00E+00	3.72E+00
		BaLa-140	<8.73E+00	0.00E+00	8.73E+00
		Be-7	<3.56E+01	0.00E+00	3.56E+01
		K-40	1.56E+02	2.03E+01	3.34E+01
		H3SW	7.48E+03	1.32E+02	1.70E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279534	11/4/2013 - 12/2/2013	Mn-54	<1.70E+00	0.00E+00	1.70E+00
		Co-58	<2.06E+00	0.00E+00	2.06E+00
		Fe-59	<4.53E+00	0.00E+00	4.53E+00
		Co-60	<1.66E+00	0.00E+00	1.66E+00
		Zn-65	<3.69E+00	0.00E+00	3.69E+00
		Zr-95	<3.69E+00	0.00E+00	3.69E+00
		Nb-95	<2.42E+00	0.00E+00	2.42E+00
		I-131	<1.11E+01	0.00E+00	1.11E+01
		Cs-134	<1.80E+00	0.00E+00	1.80E+00
		Cs-137	<1.94E+00	0.00E+00	1.94E+00
		BaLa-140	<6.17E+00	0.00E+00	6.17E+00
		Be-7	<1.90E+01	0.00E+00	1.90E+01
		K-40	1.73E+02	1.59E+01	1.82E+01
		H3SW	6.52E+03	1.37E+02	2.02E+02

## Sample Point 41 [ CONTROL - N @ 8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177722	1/21/2013 - 1/21/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.

# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 41 [ CONTROL - N @ 8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177722	1/21/2013 - 1/21/2013	Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	5.72E+02	4.74E+01	
		Tl-208	3.38E+00	1.51E+00	
		Pb-212	5.86E+00	2.87E+00	
		Bi-214	1.08E+01	3.26E+00	
		Pb-214	1.03E+01	3.49E+00	
		Ra-226	9.81E+01	3.70E+01	
		Ac-228	1.05E+01	5.21E+00	
		Th-234	9.57E+01	5.40E+00	
		177788	1/21/2013 - 1/21/2013	H3SW	<2.05E+02
177910	2/18/2013 - 2/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	5.68E+02	4.73E+01	
		Tl-208	4.86E+00	1.57E+00	
		Pb-212	4.55E+00	2.22E+00	
		Bi-214	9.75E+00	2.93E+00	
		Ra-226	1.19E+02	3.65E+01	
		Ac-228	1.26E+01	4.22E+00	
Th-234	1.24E+02	5.37E+01			
177923	2/18/2013 - 2/18/2013	H3SW	<2.05E+02	0.00E+00	2.05E+02
178041	3/18/2013 - 3/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	5.57E+02	4.64E+01	
		Tl-208	3.72E+00	1.66E+00	
		Pb-212	6.76E+00	2.85E+00	
		Bi-214	8.31E+00	3.28E+00	
		Ra-226	1.23E+02	3.65E+01	
		Ac-228	1.25E+01	5.32E+00	
Th-234	1.65E+02	5.45E+01			
178104	3/18/2013 - 3/18/2013	H3SW	<2.05E+02	0.00E+00	2.05E+02
258037	4/3/2013 - 5/6/2013	Mn-54	<1.85E+00	0.00E+00	1.85E+00
		Co-58	<2.06E+00	0.00E+00	2.06E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 41 [ CONTROL - N @ 8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD		
258037	4/3/2013 - 5/6/2013	Fe-59	<4.71E+00	0.00E+00	4.71E+00		
		Co-60	<2.81E+00	0.00E+00	2.81E+00		
		Zn-65	<4.81E+00	0.00E+00	4.81E+00		
		Zr-95	<3.85E+00	0.00E+00	3.85E+00		
		Nb-95	<3.28E+00	0.00E+00	3.28E+00		
		I-131	<1.36E+01	0.00E+00	1.36E+01		
		Cs-134	<1.96E+00	0.00E+00	1.96E+00		
		Cs-137	<2.39E+00	0.00E+00	2.39E+00		
		BaLa-140	<7.97E+00	0.00E+00	7.97E+00		
		Be-7	<2.27E+01	0.00E+00	2.27E+01		
		K-40	6.85E+01	1.25E+01	2.16E+01		
		H3SW	<-3.8E+01	0.00E+00	1.91E+02		
		259649	5/6/2013 - 6/3/2013	Mn-54	<1.76E+00	0.00E+00	1.76E+00
				Co-58	<2.02E+00	0.00E+00	2.02E+00
Fe-59	<4.30E+00			0.00E+00	4.30E+00		
Co-60	<1.76E+00			0.00E+00	1.76E+00		
Zn-65	<3.85E+00			0.00E+00	3.85E+00		
Zr-95	<3.86E+00			0.00E+00	3.86E+00		
Nb-95	<2.52E+00			0.00E+00	2.52E+00		
I-131	<1.30E+01			0.00E+00	1.30E+01		
Cs-134	<1.55E+00			0.00E+00	1.55E+00		
Cs-137	<1.61E+00			0.00E+00	1.61E+00		
BaLa-140	<5.74E+00			0.00E+00	5.74E+00		
Be-7	<1.93E+01			0.00E+00	1.93E+01		
K-40	1.65E+02			1.47E+01	1.61E+01		
H3SW	<1.19E+02			0.00E+00	1.75E+02		
262878	6/6/2013 - 7/1/2013	Mn-54	<1.83E+00	0.00E+00	1.83E+00		
		Co-58	<2.08E+00	0.00E+00	2.08E+00		
		Fe-59	<4.06E+00	0.00E+00	4.06E+00		
		Co-60	<2.04E+00	0.00E+00	2.04E+00		
		Zn-65	<3.76E+00	0.00E+00	3.76E+00		
		Zr-95	<3.65E+00	0.00E+00	3.65E+00		
		Nb-95	<2.69E+00	0.00E+00	2.69E+00		
		I-131	<1.18E+01	0.00E+00	1.18E+01		
		Cs-134	<1.70E+00	0.00E+00	1.70E+00		
		Cs-137	<1.94E+00	0.00E+00	1.94E+00		
		BaLa-140	<5.39E+00	0.00E+00	5.39E+00		
		Be-7	<1.81E+01	0.00E+00	1.81E+01		
		K-40	1.96E+02	1.35E+01	1.37E+01		
		H3SW	<5.05E+01	0.00E+00	1.80E+02		
265322	7/1/2013 - 8/5/2013	Mn-54	<1.70E+00	0.00E+00	1.70E+00		
		Co-58	<1.73E+00	0.00E+00	1.73E+00		
		Fe-59	<4.32E+00	0.00E+00	4.32E+00		
		Co-60	<1.49E+00	0.00E+00	1.49E+00		
		Zn-65	<3.40E+00	0.00E+00	3.40E+00		
		Zr-95	<3.40E+00	0.00E+00	3.40E+00		
		Nb-95	<2.66E+00	0.00E+00	2.66E+00		
		I-131	<1.40E+01	0.00E+00	1.40E+01		
		Cs-134	<1.62E+00	0.00E+00	1.62E+00		
		Cs-137	<1.55E+00	0.00E+00	1.55E+00		
		BaLa-140	<5.61E+00	0.00E+00	5.61E+00		
		Be-7	<1.75E+01	0.00E+00	1.75E+01		
		K-40	1.55E+02	1.42E+01	1.44E+01		
		H3SW	<1.36E+01	0.00E+00	1.69E+02		
269709	8/5/2013 - 9/3/2013	Mn-54	<2.34E+00	0.00E+00	2.34E+00		
		Co-58	<2.42E+00	0.00E+00	2.42E+00		
		Fe-59	<5.10E+00	0.00E+00	5.10E+00		
		Co-60	<2.62E+00	0.00E+00	2.62E+00		
		Zn-65	<4.54E+00	0.00E+00	4.54E+00		
		Zr-95	<4.57E+00	0.00E+00	4.57E+00		

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 41 [ CONTROL - N @ 8 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
269709	8/5/2013 - 9/3/2013	Nb-95	<2.95E+00	0.00E+00	2.95E+00
		I-131	<1.21E+01	0.00E+00	1.21E+01
		Cs-134	<1.84E+00	0.00E+00	1.84E+00
		Cs-137	<2.38E+00	0.00E+00	2.38E+00
		BaLa-140	<8.39E+00	0.00E+00	8.39E+00
		Be-7	<2.18E+01	0.00E+00	2.18E+01
		K-40	7.27E+01	1.48E+01	2.22E+01
		H3SW	<-9.4E+01	0.00E+00	1.87E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272781	9/3/2013 - 10/7/2013	Mn-54	<1.79E+00	0.00E+00	1.79E+00
		Co-58	<2.18E+00	0.00E+00	2.18E+00
		Fe-59	<4.79E+00	0.00E+00	4.79E+00
		Co-60	<2.34E+00	0.00E+00	2.34E+00
		Zn-65	<4.08E+00	0.00E+00	4.08E+00
		Zr-95	<3.81E+00	0.00E+00	3.81E+00
		Nb-95	<2.76E+00	0.00E+00	2.76E+00
		I-131	<1.28E+01	0.00E+00	1.28E+01
		Cs-134	<1.82E+00	0.00E+00	1.82E+00
		Cs-137	<1.96E+00	0.00E+00	1.96E+00
		BaLa-140	<7.32E+00	0.00E+00	7.32E+00
		Be-7	<2.13E+01	0.00E+00	2.13E+01
		K-40	1.70E+02	1.56E+01	1.72E+01
		H3SW	<-1.9E+01	0.00E+00	1.82E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
275212	10/7/2013 - 11/4/2013	Mn-54	<3.02E+00	0.00E+00	3.02E+00
		Co-58	<3.41E+00	0.00E+00	3.41E+00
		Fe-59	<7.39E+00	0.00E+00	7.39E+00
		Co-60	<3.08E+00	0.00E+00	3.08E+00
		Zn-65	<6.46E+00	0.00E+00	6.46E+00
		Zr-95	<7.50E+00	0.00E+00	7.50E+00
		Nb-95	<3.30E+00	0.00E+00	3.30E+00
		I-131	<1.38E+01	0.00E+00	1.38E+01
		Cs-134	<2.30E+00	0.00E+00	2.30E+00
		Cs-137	<3.97E+00	0.00E+00	3.97E+00
		BaLa-140	<8.30E+00	0.00E+00	8.30E+00
		Be-7	<3.14E+01	0.00E+00	3.14E+01
		K-40	1.85E+02	1.89E+01	3.00E+01
		H3SW	<3.05E+01	0.00E+00	1.69E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279535	11/4/2013 - 12/2/2013	Mn-54	<2.67E+00	0.00E+00	2.67E+00
		Co-58	<3.20E+00	0.00E+00	3.20E+00
		Fe-59	<6.96E+00	0.00E+00	6.96E+00
		Co-60	<3.60E+00	0.00E+00	3.60E+00
		Zn-65	<6.98E+00	0.00E+00	6.98E+00
		Zr-95	<5.74E+00	0.00E+00	5.74E+00
		Nb-95	<4.12E+00	0.00E+00	4.12E+00
		I-131	<1.44E+01	0.00E+00	1.44E+01
		Cs-134	<3.05E+00	0.00E+00	3.05E+00
		Cs-137	<3.16E+00	0.00E+00	3.16E+00
		BaLa-140	<8.95E+00	0.00E+00	8.95E+00
		Be-7	<3.34E+01	0.00E+00	3.34E+01
		K-40	1.64E+02	2.10E+01	3.14E+01
		H3SW	<-2.2E+01	0.00E+00	1.98E+02

Sample Point 57 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177723	1/21/2013 - 1/21/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 57 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177723	1/21/2013 - 1/21/2013	Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.27E+02	2.77E+01	
		Tl-208	2.70E+00	1.28E+00	
		Pb-212	1.01E+01	1.55E+00	
		Bi-214	3.15E+01	4.38E+00	
		Pb-214	2.85E+01	3.93E+00	
		Ra-226	1.90E+02	3.25E+01	
		Th-234	2.51E+02	4.94E+01	
		<hr/>			
177789	1/21/2013 - 1/21/2013	H3SW	4.94E+02	1.28E+02	2.04E+02
		<hr/>			
177911	2/18/2013 - 2/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.39E+02	2.94E+01	
		Tl-208	3.10E+00	1.50E+00	
		Pb-212	7.69E+00	2.14E+00	
		Bi-214	1.58E+01	3.13E+00	
		Pb-214	1.86E+01	3.44E+00	
		Ra-226	2.19E+02	3.28E+01	
		Th-234	2.13E+02	4.79E+01	
		<hr/>			
177924	2/18/2013 - 2/18/2013	H3SW	<2.05E+02	0.00E+00	2.05E+02
		<hr/>			
178042	3/18/2013 - 3/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	2.20E+02	2.81E+01	
		Tl-208	3.72E+00	1.39E+00	
		Pb-212	8.98E+00	2.38E+00	
		Bi-214	9.88E+00	2.66E+00	
		Pb-214	5.62E+00	2.53E+00	
		Ra-226	2.11E+02	3.29E+01	
		Th-234	1.82E+02	4.27E+01	
		<hr/>			
178105	3/18/2013 - 3/18/2013	H3SW	<2.05E+02	0.00E+00	2.05E+02
		<hr/>			
258039	4/3/2013 - 5/6/2013	Mn-54	<1.80E+00	0.00E+00	1.80E+00
		Co-58	<1.78E+00	0.00E+00	1.78E+00
		Fe-59	<3.98E+00	0.00E+00	3.98E+00
		Co-60	<2.59E+00	0.00E+00	2.59E+00
		Zn-65	<3.44E+00	0.00E+00	3.44E+00
		Zr-95	<3.70E+00	0.00E+00	3.70E+00
		Nb-95	<2.59E+00	0.00E+00	2.59E+00
		I-131	<1.38E+01	0.00E+00	1.38E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 57 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258039	4/3/2013 - 5/6/2013	Cs-134	<1.75E+00	0.00E+00	1.75E+00
		Cs-137	<1.71E+00	0.00E+00	1.71E+00
		BaLa-140	<7.43E+00	0.00E+00	7.43E+00
		Be-7	<1.83E+01	0.00E+00	1.83E+01
		K-40	8.39E+01	1.02E+01	2.02E+01
		H3SW	<3.10E+01	0.00E+00	1.90E+02
259650	5/6/2013 - 6/3/2013	Mn-54	<2.20E+00	0.00E+00	2.20E+00
		Co-58	<2.59E+00	0.00E+00	2.59E+00
		Fe-59	<5.70E+00	0.00E+00	5.70E+00
		Co-60	<2.93E+00	0.00E+00	2.93E+00
		Zn-65	<4.84E+00	0.00E+00	4.84E+00
		Zr-95	<4.87E+00	0.00E+00	4.87E+00
		Nb-95	<3.76E+00	0.00E+00	3.76E+00
		I-131	<1.45E+01	0.00E+00	1.45E+01
		Cs-134	<2.13E+00	0.00E+00	2.13E+00
		Cs-137	<2.11E+00	0.00E+00	2.11E+00
		BaLa-140	<9.36E+00	0.00E+00	9.36E+00
		Be-7	<2.37E+01	0.00E+00	2.37E+01
		K-40	1.26E+02	1.58E+01	2.28E+01
		H3SW	<4.67E+00	0.00E+00	1.72E+02
262879	6/6/2013 - 7/1/2013	Mn-54	<1.79E+00	0.00E+00	1.79E+00
		Co-58	<2.25E+00	0.00E+00	2.25E+00
		Fe-59	<5.72E+00	0.00E+00	5.72E+00
		Co-60	<2.31E+00	0.00E+00	2.31E+00
		Zn-65	<4.32E+00	0.00E+00	4.32E+00
		Zr-95	<4.37E+00	0.00E+00	4.37E+00
		Nb-95	<3.34E+00	0.00E+00	3.34E+00
		I-131	<1.28E+01	0.00E+00	1.28E+01
		Cs-134	<1.75E+00	0.00E+00	1.75E+00
		Cs-137	<2.17E+00	0.00E+00	2.17E+00
		BaLa-140	<8.28E+00	0.00E+00	8.28E+00
		Be-7	<2.26E+01	0.00E+00	2.26E+01
		K-40	9.29E+01	1.10E+01	2.07E+01
		H3SW	<7.18E+00	0.00E+00	1.79E+02
265323	7/1/2013 - 8/5/2013	Mn-54	<2.09E+00	0.00E+00	2.09E+00
		Co-58	<2.79E+00	0.00E+00	2.79E+00
		Fe-59	<5.68E+00	0.00E+00	5.68E+00
		Co-60	<2.64E+00	0.00E+00	2.64E+00
		Zn-65	<4.42E+00	0.00E+00	4.42E+00
		Zr-95	<5.04E+00	0.00E+00	5.04E+00
		Nb-95	<3.50E+00	0.00E+00	3.50E+00
		I-131	<1.24E+01	0.00E+00	1.24E+01
		Cs-134	<2.35E+00	0.00E+00	2.35E+00
		Cs-137	<2.44E+00	0.00E+00	2.44E+00
		BaLa-140	<8.50E+00	0.00E+00	8.50E+00
		Be-7	<2.47E+01	0.00E+00	2.47E+01
		K-40	4.71E+01	1.79E+01	2.54E+01
		H3SW	<9.04E+01	0.00E+00	1.68E+02
269710	8/5/2013 - 9/3/2013	Mn-54	<2.91E+00	0.00E+00	2.91E+00
		Co-58	<3.19E+00	0.00E+00	3.19E+00
		Fe-59	<6.38E+00	0.00E+00	6.38E+00
		Co-60	<3.46E+00	0.00E+00	3.46E+00
		Zn-65	<5.15E+00	0.00E+00	5.15E+00
		Zr-95	<6.02E+00	0.00E+00	6.02E+00
		Nb-95	<3.52E+00	0.00E+00	3.52E+00
		I-131	<1.45E+01	0.00E+00	1.45E+01
		Cs-134	<2.53E+00	0.00E+00	2.53E+00
		Cs-137	<2.32E+00	0.00E+00	2.32E+00
		BaLa-140	<9.21E+00	0.00E+00	9.21E+00
		Be-7	<2.11E+01	0.00E+00	2.11E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 57 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
269710	8/5/2013 - 9/3/2013	K-40	7.02E+01	1.24E+01	2.46E+01
		H3SW	<0.00E+00	0.00E+00	1.87E+02
Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272782	9/3/2013 - 10/7/2013	Mn-54	<2.27E+00	0.00E+00	2.27E+00
		Co-58	<2.59E+00	0.00E+00	2.59E+00
		Fe-59	<5.52E+00	0.00E+00	5.52E+00
		Co-60	<2.59E+00	0.00E+00	2.59E+00
		Zn-65	<4.86E+00	0.00E+00	4.86E+00
		Zr-95	<4.74E+00	0.00E+00	4.74E+00
		Nb-95	<2.90E+00	0.00E+00	2.90E+00
		I-131	<1.44E+01	0.00E+00	1.44E+01
		Cs-134	<2.13E+00	0.00E+00	2.13E+00
		Cs-137	<2.41E+00	0.00E+00	2.41E+00
		BaLa-140	<9.34E+00	0.00E+00	9.34E+00
		Be-7	<2.15E+01	0.00E+00	2.15E+01
		K-40	<3.70E+01	0.00E+00	3.70E+01
H3SW	<-5.2E+01	0.00E+00	1.81E+02		

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
275213	10/7/2013 - 11/4/2013	Mn-54	<3.42E+00	0.00E+00	3.42E+00
		Co-58	<3.80E+00	0.00E+00	3.80E+00
		Fe-59	<7.55E+00	0.00E+00	7.55E+00
		Co-60	<3.89E+00	0.00E+00	3.89E+00
		Zn-65	<6.51E+00	0.00E+00	6.51E+00
		Zr-95	<6.76E+00	0.00E+00	6.76E+00
		Nb-95	<4.24E+00	0.00E+00	4.24E+00
		I-131	<1.28E+01	0.00E+00	1.28E+01
		Cs-134	<3.06E+00	0.00E+00	3.06E+00
		Cs-137	<3.34E+00	0.00E+00	3.34E+00
		BaLa-140	<9.43E+00	0.00E+00	9.43E+00
		Be-7	<3.42E+01	0.00E+00	3.42E+01
		K-40	7.68E+01	1.42E+01	3.30E+01
		H3SW	<1.22E+02	0.00E+00	1.69E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279536	11/4/2013 - 12/2/2013	Mn-54	<2.56E+00	0.00E+00	2.56E+00
		Co-58	<2.83E+00	0.00E+00	2.83E+00
		Fe-59	<7.06E+00	0.00E+00	7.06E+00
		Co-60	<3.40E+00	0.00E+00	3.40E+00
		Zn-65	<6.59E+00	0.00E+00	6.59E+00
		Zr-95	<5.25E+00	0.00E+00	5.25E+00
		Nb-95	<3.70E+00	0.00E+00	3.70E+00
		I-131	<1.36E+01	0.00E+00	1.36E+01
		Cs-134	<2.77E+00	0.00E+00	2.77E+00
		Cs-137	<2.59E+00	0.00E+00	2.59E+00
		BaLa-140	<4.67E+00	0.00E+00	4.67E+00
		Be-7	<2.81E+01	0.00E+00	2.81E+01
		K-40	6.47E+01	1.71E+01	2.55E+01
		H3SW	<3.34E+01	0.00E+00	2.03E+02

Sample Point 66 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177724	1/21/2013 - 1/21/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	4.82E+02	4.04E+01	
		Tl-208	5.31E+00	1.52E+00	
		Pb-212	1.33E+01	2.65E+00	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 66 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
177724	1/21/2013 - 1/21/2013	Bi-214	1.67E+01	3.30E+00	
		Pb-214	1.38E+01	3.38E+00	
		Ra-226	1.80E+02	3.50E+01	
		Ac-228	1.61E+01	5.15E+00	
		Th-234	2.11E+02	4.88E+01	
177790	1/21/2013 - 1/21/2013	H3SW	1.07E+03	1.33E+02	2.04E+02
177912	2/18/2013 - 2/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	4.53E+02	3.81E+01	
		Tl-208	4.80E+00	1.40E+00	
		Pb-212	1.04E+01	2.75E+00	
		Bi-214	1.68E+01	3.40E+00	
		Pb-214	1.26E+01	3.07E+00	
		Ra-226	2.18E+02	3.77E+01	
		Ac-228	1.45E+01	5.24E+00	
		Th-234	2.15E+02	5.18E+01	
177925	2/18/2013 - 2/18/2013	H3SW	7.10E+02	1.31E+02	2.05E+02
178043	3/18/2013 - 3/18/2013	Mn-54	<1.50E+01	0.00E+00	1.50E+01
		Co-58	<1.50E+01	0.00E+00	1.50E+01
		Fe-59	<3.00E+01	0.00E+00	3.00E+01
		Co-60	<1.50E+01	0.00E+00	1.50E+01
		Zn-65	<3.00E+01	0.00E+00	3.00E+01
		Zr-95	<1.50E+01	0.00E+00	1.50E+01
		Nb-95	<1.50E+01	0.00E+00	1.50E+01
		I-131	<1.50E+01	0.00E+00	1.50E+01
		Cs-134	<1.50E+01	0.00E+00	1.50E+01
		Cs-137	<1.80E+01	0.00E+00	1.80E+01
		BaLa-140	<1.50E+01	0.00E+00	1.50E+01
		K-40	4.36E+02	3.70E+01	
		Tl-208	5.58E+00	1.34E+00	
		Pb-212	1.01E+01	2.53E+00	
		Bi-214	1.53E+01	2.80E+00	
		Pb-214	1.38E+01	3.29E+00	
		Ra-226	2.01E+02	3.71E+01	
		Ac-228	1.50E+01	4.57E+00	
		Th-234	2.06E+02	4.77E+01	
178106	3/18/2013 - 3/18/2013	H3SW	4.97E+02	1.29E+02	2.05E+02
258040	4/3/2013 - 5/6/2013	Mn-54	<1.68E+00	0.00E+00	1.68E+00
		Co-58	<2.30E+00	0.00E+00	2.30E+00
		Fe-59	<5.22E+00	0.00E+00	5.22E+00
		Co-60	<2.85E+00	0.00E+00	2.85E+00
		Zn-65	<3.91E+00	0.00E+00	3.91E+00
		Zr-95	<3.93E+00	0.00E+00	3.93E+00
		Nb-95	<2.83E+00	0.00E+00	2.83E+00
		I-131	<1.40E+01	0.00E+00	1.40E+01
		Cs-134	<1.90E+00	0.00E+00	1.90E+00
		Cs-137	<2.15E+00	0.00E+00	2.15E+00
		BaLa-140	<8.22E+00	0.00E+00	8.22E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 66 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
258040	4/3/2013 - 5/6/2013	Be-7	<1.91E+01	0.00E+00	1.91E+01
		K-40	4.87E+01	1.35E+01	2.00E+01
		H3SW	3.67E+02	6.38E+01	1.90E+02
259651	5/6/2013 - 6/3/2013	Mn-54	<1.86E+00	0.00E+00	1.86E+00
		Co-58	<2.09E+00	0.00E+00	2.09E+00
		Fe-59	<5.10E+00	0.00E+00	5.10E+00
		Co-60	<2.36E+00	0.00E+00	2.36E+00
		Zn-65	<3.94E+00	0.00E+00	3.94E+00
		Zr-95	<4.08E+00	0.00E+00	4.08E+00
		Nb-95	<2.77E+00	0.00E+00	2.77E+00
		I-131	<1.30E+01	0.00E+00	1.30E+01
		Cs-134	<1.77E+00	0.00E+00	1.77E+00
		Cs-137	<2.18E+00	0.00E+00	2.18E+00
		BaLa-140	<7.25E+00	0.00E+00	7.25E+00
		Be-7	<2.03E+01	0.00E+00	2.03E+01
		K-40	6.64E+01	1.57E+01	1.98E+01
		H3SW	5.27E+02	5.91E+01	1.65E+02
262880	6/6/2013 - 7/11/2013	Mn-54	<1.31E+00	0.00E+00	1.31E+00
		Co-58	<1.60E+00	0.00E+00	1.60E+00
		Fe-59	<4.06E+00	0.00E+00	4.06E+00
		Co-60	<1.87E+00	0.00E+00	1.87E+00
		Zn-65	<3.12E+00	0.00E+00	3.12E+00
		Zr-95	<2.95E+00	0.00E+00	2.95E+00
		Nb-95	<2.28E+00	0.00E+00	2.28E+00
		I-131	<1.38E+01	0.00E+00	1.38E+01
		Cs-134	<1.22E+00	0.00E+00	1.22E+00
		Cs-137	<1.42E+00	0.00E+00	1.42E+00
		BaLa-140	<6.26E+00	0.00E+00	6.26E+00
		Be-7	<1.48E+01	0.00E+00	1.48E+01
		K-40	6.10E+01	9.04E+00	1.38E+01
		H3SW	1.34E+03	7.41E+01	1.76E+02
265324	7/1/2013 - 8/5/2013	Mn-54	<2.29E+00	0.00E+00	2.29E+00
		Co-58	<2.48E+00	0.00E+00	2.48E+00
		Fe-59	<5.86E+00	0.00E+00	5.86E+00
		Co-60	<2.53E+00	0.00E+00	2.53E+00
		Zn-65	<4.24E+00	0.00E+00	4.24E+00
		Zr-95	<4.86E+00	0.00E+00	4.86E+00
		Nb-95	<3.65E+00	0.00E+00	3.65E+00
		I-131	<1.43E+01	0.00E+00	1.43E+01
		Cs-134	<2.14E+00	0.00E+00	2.14E+00
		Cs-137	<2.19E+00	0.00E+00	2.19E+00
		BaLa-140	<8.87E+00	0.00E+00	8.87E+00
		Be-7	<2.44E+01	0.00E+00	2.44E+01
		K-40	2.73E+01	1.68E+01	2.27E+01
		H3SW	3.28E+03	9.38E+01	1.68E+02
269711	8/5/2013 - 9/3/2013	Mn-54	<2.16E+00	0.00E+00	2.16E+00
		Co-58	<2.33E+00	0.00E+00	2.33E+00
		Fe-59	<6.29E+00	0.00E+00	6.29E+00
		Co-60	<2.35E+00	0.00E+00	2.35E+00
		Zn-65	<5.11E+00	0.00E+00	5.11E+00
		Zr-95	<4.08E+00	0.00E+00	4.08E+00
		Nb-95	<3.28E+00	0.00E+00	3.28E+00
		I-131	<1.42E+01	0.00E+00	1.42E+01
		Cs-134	<2.15E+00	0.00E+00	2.15E+00
		Cs-137	<2.29E+00	0.00E+00	2.29E+00
		BaLa-140	<8.15E+00	0.00E+00	8.15E+00
		Be-7	<2.28E+01	0.00E+00	2.28E+01
		K-40	1.79E+02	1.72E+01	2.21E+01
		H3SW	3.35E+03	9.88E+01	1.87E+02

(1) Analysis results generated by Hams Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: SURFACE WATER Concentration (Activity): pCi/l

Sample Point 66 [ INDICATOR - @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
272783	9/3/2013 - 10/7/2013	Mn-54	<1.85E+00	0.00E+00	1.85E+00
		Co-58	<2.38E+00	0.00E+00	2.38E+00
		Fe-59	<4.90E+00	0.00E+00	4.90E+00
		Co-60	<1.96E+00	0.00E+00	1.96E+00
		Zn-65	<3.59E+00	0.00E+00	3.59E+00
		Zr-95	<4.05E+00	0.00E+00	4.05E+00
		Nb-95	<2.92E+00	0.00E+00	2.92E+00
		I-131	<1.24E+01	0.00E+00	1.24E+01
		Cs-134	<1.73E+00	0.00E+00	1.73E+00
		Cs-137	<2.12E+00	0.00E+00	2.12E+00
		BaLa-140	<6.82E+00	0.00E+00	6.82E+00
		Be-7	<1.99E+01	0.00E+00	1.99E+01
		K-40	8.88E+01	1.23E+01	1.82E+01
		H3SW	3.59E+03	9.96E+01	1.78E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
275214	10/7/2013 - 11/4/2013	Mn-54	<2.94E+00	0.00E+00	2.94E+00
		Co-58	<2.82E+00	0.00E+00	2.82E+00
		Fe-59	<6.97E+00	0.00E+00	6.97E+00
		Co-60	<2.90E+00	0.00E+00	2.90E+00
		Zn-65	<6.05E+00	0.00E+00	6.05E+00
		Zr-95	<6.28E+00	0.00E+00	6.28E+00
		Nb-95	<4.84E+00	0.00E+00	4.84E+00
		I-131	<1.23E+01	0.00E+00	1.23E+01
		Cs-134	<2.51E+00	0.00E+00	2.51E+00
		Cs-137	<3.40E+00	0.00E+00	3.40E+00
		BaLa-140	<9.07E+00	0.00E+00	9.07E+00
		Be-7	<2.86E+01	0.00E+00	2.86E+01
		K-40	1.04E+02	1.52E+01	2.66E+01
		H3SW	5.57E+03	1.16E+02	1.69E+02

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD
279537	11/4/2013 - 12/2/2013	Mn-54	<2.06E+00	0.00E+00	2.06E+00
		Co-58	<2.24E+00	0.00E+00	2.24E+00
		Fe-59	<5.00E+00	0.00E+00	5.00E+00
		Co-60	<2.28E+00	0.00E+00	2.28E+00
		Zn-65	<4.75E+00	0.00E+00	4.75E+00
		Zr-95	<4.06E+00	0.00E+00	4.06E+00
		Nb-95	<3.11E+00	0.00E+00	3.11E+00
		I-131	<1.34E+01	0.00E+00	1.34E+01
		Cs-134	<2.04E+00	0.00E+00	2.04E+00
		Cs-137	<2.11E+00	0.00E+00	2.11E+00
		BaLa-140	<6.14E+00	0.00E+00	6.14E+00
		Be-7	<2.49E+01	0.00E+00	2.49E+01
		K-40	1.62E+02	1.52E+01	2.18E+01
		H3SW	4.86E+03	1.23E+02	2.03E+02

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 1 [ CONTROL - ESE @ 24.4 miles ]

TLD RING TLD\_CTRL

Sample ID:	Sample Dates:	Nuclide	Activity
114957	2/15/2013 - 2/15/2013	mR/Std Qtr	1.23E+01

Sample ID:	Sample Dates:	Nuclide	Activity
262687	4/17/2013 - 7/3/2013	mR/Std Qtr	12.2

Sample ID:	Sample Dates:	Nuclide	Activity
272296	7/3/2013 - 10/10/2013	mR/Std Qtr	12.0

Sample ID:	Sample Dates:	Nuclide	Activity
281068	10/10/2013 - 1/16/2014	mR/Std Qtr	12.0

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114958	2/15/2013 - 2/15/2013	mR/Std Qtr	1.23E+01

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 2 [ INDICATOR - S @ 0.2 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
262729	4/17/2013 - 7/3/2013	mR/Std Qtr	12.0
272338	7/3/2013 - 10/10/2013	mR/Std Qtr	12.6
281110	10/10/2013 - 1/16/2014	mR/Std Qtr	11.3

Sample Point 3 [ INDICATOR - N @ 0.5 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114959	2/15/2013 - 2/15/2013	mR/Std Qtr	1.38E+01
262688	4/17/2013 - 7/3/2013	mR/Std Qtr	13.2
272297	7/3/2013 - 10/10/2013	mR/Std Qtr	14.0
281069	10/10/2013 - 1/16/2014	mR/Std Qtr	13.2

Sample Point 4 [ INDICATOR - ESE @ 0.4 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114960	2/15/2013 - 2/15/2013	mR/Std Qtr	9.90E+00
262689	4/17/2013 - 7/3/2013	mR/Std Qtr	10.1
272298	7/3/2013 - 10/10/2013	mR/Std Qtr	9.5
281070	10/10/2013 - 1/16/2014	mR/Std Qtr	9.5

Sample Point 5 [ INDICATOR - ENE @ 0.9 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114961	2/15/2013 - 2/15/2013	mR/Std Qtr	1.39E+01
262690	4/17/2013 - 7/3/2013	mR/Std Qtr	11.7
272299	7/3/2013 - 10/10/2013	mR/Std Qtr	14.0
281071	10/10/2013 - 1/16/2014	mR/Std Qtr	11.9

Sample Point 6 [ INDICATOR - SSW @ 0.2 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114962	2/15/2013 - 2/15/2013	mR/Std Qtr	1.29E+01
262691	4/17/2013 - 7/3/2013	mR/Std Qtr	13.4
272300	7/3/2013 - 10/10/2013	mR/Std Qtr	12.6
281072	10/10/2013 - 1/16/2014	mR/Std Qtr	12.8

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114963	2/15/2013 - 2/15/2013	mR/Std Qtr	1.38E+01
262692	4/17/2013 - 7/3/2013	mR/Std Qtr	12.0

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 7 [ INDICATOR - ESE @ 6.4 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
272301	7/3/2013 - 10/10/2013	mR/Std Qtr	14.2
281073	10/10/2013 - 1/16/2014	mR/Std Qtr	12.2

Sample Point 8 [ INDICATOR - SSE @ 0.8 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114964	2/15/2013 - 2/15/2013	mR/Std Qtr	9.80E+00
262693	4/17/2013 - 7/3/2013	mR/Std Qtr	10.2
272302	7/3/2013 - 10/10/2013	mR/Std Qtr	10.4
281074	10/10/2013 - 1/16/2014	mR/Std Qtr	9.7

Sample Point 9 [ INDICATOR - S @ 1 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114965	2/15/2013 - 2/15/2013	mR/Std Qtr	1.04E+01
272303	7/3/2013 - 10/10/2013	mR/Std Qtr	11.2
281075	10/10/2013 - 1/16/2014	mR/Std Qtr	10.8

Sample Point 10 [ INDICATOR - WSW @ 1 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114966	2/15/2013 - 2/15/2013	mR/Std Qtr	1.24E+01
262695	4/17/2013 - 7/3/2013	mR/Std Qtr	11.9
272304	7/3/2013 - 10/10/2013	mR/Std Qtr	11.8
281076	10/10/2013 - 1/16/2014	mR/Std Qtr	12.0

Sample Point 11 [ INDICATOR - SW @ 1 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114967	2/15/2013 - 2/15/2013	mR/Std Qtr	1.09E+01
262696	4/17/2013 - 7/3/2013	mR/Std Qtr	11.1
272305	7/3/2013 - 10/10/2013	mR/Std Qtr	10.6
281077	10/10/2013 - 1/16/2014	mR/Std Qtr	11.4

Sample Point 12 [ INDICATOR - SSW @ 1.2 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114968	2/15/2013 - 2/15/2013	mR/Std Qtr	1.48E+01
262697	4/17/2013 - 7/3/2013	mR/Std Qtr	15.8
272306	7/3/2013 - 10/10/2013	mR/Std Qtr	14.8
281078	10/10/2013 - 1/16/2014	mR/Std Qtr	15.5

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 13 [ INDICATOR - W @ 0.7 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114969	2/15/2013 - 2/15/2013	mR/Std Qtr	1.15E+01
262698	4/17/2013 - 7/3/2013	mR/Std Qtr	11.3
272307	7/3/2013 - 10/10/2013	mR/Std Qtr	10.8
281079	10/10/2013 - 1/16/2014	mR/Std Qtr	10.7

Sample Point 14 [ INDICATOR - WNW @ 0.8 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114970	2/15/2013 - 2/15/2013	mR/Std Qtr	1.51E+01
262699	4/17/2013 - 7/3/2013	mR/Std Qtr	15.1
272308	7/3/2013 - 10/10/2013	mR/Std Qtr	14.5
281080	10/10/2013 - 1/16/2014	mR/Std Qtr	14.9

Sample Point 15 [ INDICATOR - NW @ 0.7 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114971	2/15/2013 - 2/15/2013	mR/Std Qtr	1.13E+01
262700	4/17/2013 - 7/3/2013	mR/Std Qtr	11.6
272309	7/3/2013 - 10/10/2013	mR/Std Qtr	11.2
281081	10/10/2013 - 1/16/2014	mR/Std Qtr	10.9

Sample Point 16 [ INDICATOR - NNW @ 1 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114972	2/15/2013 - 2/15/2013	mR/Std Qtr	1.26E+01
262701	4/17/2013 - 7/3/2013	mR/Std Qtr	12.3
272310	7/3/2013 - 10/10/2013	mR/Std Qtr	13.4
281082	10/10/2013 - 1/16/2014	mR/Std Qtr	11.9

Sample Point 17 [ INDICATOR - N @ 1.2 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114973	2/15/2013 - 2/15/2013	mR/Std Qtr	1.50E+01
262702	4/17/2013 - 7/3/2013	mR/Std Qtr	14.8
272311	7/3/2013 - 10/10/2013	mR/Std Qtr	14.9
281083	10/10/2013 - 1/16/2014	mR/Std Qtr	14.7

Sample Point 18 [ INDICATOR - SE @ 0.7 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114974	2/15/2013 - 2/15/2013	mR/Std Qtr	1.68E+01

(1) Analysis results generated by Hams Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 18 [ INDICATOR - SE @ 0.7 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
262703	4/17/2013 - 7/3/2013	mR/Std Qtr	16.9
272312	7/3/2013 - 10/10/2013	mR/Std Qtr	18.5
281084	10/10/2013 - 1/16/2014	mR/Std Qtr	17.1

Sample Point 19 [ INDICATOR - E @ 1 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114975	2/15/2013 - 2/15/2013	mR/Std Qtr	1.22E+01
262704	4/17/2013 - 7/3/2013	mR/Std Qtr	12.0
272313	7/3/2013 - 10/10/2013	mR/Std Qtr	12.8
281085	10/10/2013 - 1/16/2014	mR/Std Qtr	11.5

Sample Point 20 [ INDICATOR - ENE @ 1 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114976	2/15/2013 - 2/15/2013	mR/Std Qtr	1.39E+01
262705	4/17/2013 - 7/3/2013	mR/Std Qtr	13.0
272314	7/3/2013 - 10/10/2013	mR/Std Qtr	14.6
281086	10/10/2013 - 1/16/2014	mR/Std Qtr	12.8

Sample Point 21 [ INDICATOR - NE @ 1.4 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114977	2/15/2013 - 2/15/2013	mR/Std Qtr	1.33E+01
262706	4/17/2013 - 7/3/2013	mR/Std Qtr	11.5
272315	7/3/2013 - 10/10/2013	mR/Std Qtr	13.5
281087	10/10/2013 - 1/16/2014	mR/Std Qtr	11.3

Sample Point 22 [ INDICATOR - NNE @ 1.7 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114978	2/15/2013 - 2/15/2013	mR/Std Qtr	1.05E+01
262707	4/17/2013 - 7/3/2013	mR/Std Qtr	11.7
272316	7/3/2013 - 10/10/2013	mR/Std Qtr	11.1
281088	10/10/2013 - 1/16/2014	mR/Std Qtr	11.7

Sample Point 23 [ INDICATOR - ESE @ 1 miles ]

TLD RING TLD\_INNER

Sample ID:	Sample Dates:	Nuclide	Activity
114979	2/15/2013 - 2/15/2013	mR/Std Qtr	1.43E+01
262708	4/17/2013 - 7/3/2013	mR/Std Qtr	14.8

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 23 [ INDICATOR - ESE @ 1 miles ]

TLD RING TLD\_INNER

Sample ID: 272317 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 14.2

Sample ID: 281089 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 14.5

Sample Point 24 [ INDICATOR - NW @ 4.6 miles ]

TLD RING TLD\_OUTER

Sample ID: 114980 Sample Dates: 2/15/2013 - 2/15/2013 Nuclide Activity  
mR/Std Qtr 1.54E+01

Sample ID: 262709 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 16.0

Sample ID: 272318 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 16.0

Sample ID: 281090 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 15.1

Sample Point 25 [ INDICATOR - NNW @ 4 miles ]

TLD RING TLD\_OUTER

Sample ID: 114981 Sample Dates: 2/15/2013 - 2/15/2013 Nuclide Activity  
mR/Std Qtr 1.34E+01

Sample ID: 262710 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 13.1

Sample ID: 272319 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 12.8

Sample ID: 281091 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 13.3

Sample Point 26 [ INDICATOR - N @ 5 miles ]

TLD RING TLD\_OUTER

Sample ID: 114982 Sample Dates: 2/15/2013 - 2/15/2013 Nuclide Activity  
mR/Std Qtr 1.32E+01

Sample ID: 262711 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 13.1

Sample ID: 272320 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 13.0

Sample ID: 281092 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 13.1

Sample Point 27 [ INDICATOR - NNE @ 5.4 miles ]

TLD RING TLD\_OUTER

Sample ID: 262712 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 11.1

Sample ID: 272321 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 11.8

Sample ID: 281093 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 10.7

Sample Point 28 [ INDICATOR - NE @ 4.3 miles ]

TLD RING TLD\_OUTER

Sample ID: 262713 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 17.0

Sample ID: 272322 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 18.1

Sample ID: 281094 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 16.6

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 29 [ INDICATOR - ENE @ 4 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114983	2/15/2013 - 2/15/2013	mR/Std Qtr	1.20E+01
262714	4/17/2013 - 7/3/2013	mR/Std Qtr	10.5
272323	7/3/2013 - 10/10/2013	mR/Std Qtr	10.6
281095	10/10/2013 - 1/16/2014	mR/Std Qtr	10.2

Sample Point 30 [ INDICATOR - E @ 4.4 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114984	2/15/2013 - 2/15/2013	mR/Std Qtr	1.38E+01
262715	4/17/2013 - 7/3/2013	mR/Std Qtr	13.8
272324	7/3/2013 - 10/10/2013	mR/Std Qtr	13.5
281096	10/10/2013 - 1/16/2014	mR/Std Qtr	13.9

Sample Point 31 [ INDICATOR - ESE @ 4.6 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114985	2/15/2013 - 2/15/2013	mR/Std Qtr	1.52E+01
262716	4/17/2013 - 7/3/2013	mR/Std Qtr	13.0
272325	7/3/2013 - 10/10/2013	mR/Std Qtr	15.5
281097	10/10/2013 - 1/16/2014	mR/Std Qtr	13.2

Sample Point 32 [ INDICATOR - SE @ 4 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114986	2/15/2013 - 2/15/2013	mR/Std Qtr	1.22E+01
262717	4/17/2013 - 7/3/2013	mR/Std Qtr	12.7
272326	7/3/2013 - 10/10/2013	mR/Std Qtr	12.2
281098	10/10/2013 - 1/16/2014	mR/Std Qtr	11.9

Sample Point 33 [ INDICATOR - SSE @ 4.5 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114987	2/15/2013 - 2/15/2013	mR/Std Qtr	1.34E+01
262718	4/17/2013 - 7/3/2013	mR/Std Qtr	13.7
272327	7/3/2013 - 10/10/2013	mR/Std Qtr	13.1
281099	10/10/2013 - 1/16/2014	mR/Std Qtr	13.6

Sample Point 34 [ INDICATOR - S @ 4.7 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114988	2/15/2013 - 2/15/2013	mR/Std Qtr	9.90E+00

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 34 [ INDICATOR - S @ 4.7 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
262719	4/17/2013 - 7/3/2013	mR/Std Qtr	10.3
272328	7/3/2013 - 10/10/2013	mR/Std Qtr	10.2
281100	10/10/2013 - 1/16/2014	mR/Std Qtr	9.8

Sample Point 35 [ INDICATOR - SSW @ 4.5 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114989	2/15/2013 - 2/15/2013	mR/Std Qtr	1.91E+01
262720	4/17/2013 - 7/3/2013	mR/Std Qtr	19.4
272329	7/3/2013 - 10/10/2013	mR/Std Qtr	19.3
281101	10/10/2013 - 1/16/2014	mR/Std Qtr	26.9

Sample Point 36 [ INDICATOR - SW @ 5 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114990	2/15/2013 - 2/15/2013	mR/Std Qtr	1.84E+01
262721	4/17/2013 - 7/3/2013	mR/Std Qtr	18.1
272330	7/3/2013 - 10/10/2013	mR/Std Qtr	19.3
281102	10/10/2013 - 1/16/2014	mR/Std Qtr	17.5

Sample Point 37 [ INDICATOR - WSW @ 5 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114991	2/15/2013 - 2/15/2013	mR/Std Qtr	1.93E+01
262722	4/17/2013 - 7/3/2013	mR/Std Qtr	18.1
272331	7/3/2013 - 10/10/2013	mR/Std Qtr	19.3
281103	10/10/2013 - 1/16/2014	mR/Std Qtr	18.7

Sample Point 38 [ INDICATOR - W @ 4.9 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114992	2/15/2013 - 2/15/2013	mR/Std Qtr	1.39E+01
262723	4/17/2013 - 7/3/2013	mR/Std Qtr	15.0
272332	7/3/2013 - 10/10/2013	mR/Std Qtr	14.2
281104	10/10/2013 - 1/16/2014	mR/Std Qtr	14.9

Sample Point 39 [ INDICATOR - WNW @ 5.1 miles ]

TLD RING TLD\_OUTER

Sample ID:	Sample Dates:	Nuclide	Activity
114993	2/15/2013 - 2/15/2013	mR/Std Qtr	1.39E+01
262724	4/17/2013 - 7/3/2013	mR/Std Qtr	13.7

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: TLD Concentration (Activity): mR/Standard Quarter

Sample Point 39 [ INDICATOR - WNW @ 5.1 miles ]

TLD RING TLD\_OUTER

Sample ID: 272333 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 13.5

Sample ID: 281105 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 13.3

Sample Point 55 [ INDICATOR - SSE @ 0.2 miles ]

TLD RING TLD\_INNER

Sample ID: 114994 Sample Dates: 2/15/2013 - 2/15/2013 Nuclide Activity  
mR/Std Qtr 1.44E+01

Sample ID: 262725 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 14.5

Sample ID: 272334 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 14.5

Sample ID: 281106 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 14.0

Sample Point 56 [ INDICATOR - NNW @ 0.4 miles ]

TLD RING TLD\_INNER

Sample ID: 114995 Sample Dates: 2/15/2013 - 2/15/2013 Nuclide Activity  
mR/Std Qtr 1.57E+01

Sample ID: 262726 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 14.9

Sample ID: 272335 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 15.0

Sample ID: 281107 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 14.3

Sample Point 61 [ INDICATOR - WSW @ 0.3 miles ]

TLD RING TLD\_INNER

Sample ID: 114996 Sample Dates: 2/15/2013 - 2/15/2013 Nuclide Activity  
mR/Std Qtr 1.70E+01

Sample ID: 262727 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 17.4

Sample ID: 272336 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 16.9

Sample ID: 281108 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 16.6

Sample Point 65 [ INDICATOR - WNW @ 0.3 miles ]

TLD RING TLD\_INNER

Sample ID: 114997 Sample Dates: 2/15/2013 - 2/15/2013 Nuclide Activity  
mR/Std Qtr 1.68E+01

Sample ID: 262728 Sample Dates: 4/17/2013 - 7/3/2013 Nuclide Activity  
mR/Std Qtr 16.5

Sample ID: 272337 Sample Dates: 7/3/2013 - 10/10/2013 Nuclide Activity  
mR/Std Qtr 16.4

Sample ID: 281109 Sample Dates: 10/10/2013 - 1/16/2014 Nuclide Activity  
mR/Std Qtr 16.2

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 50 [ INDICATOR - SSE @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
258273	5/14/2013 - 5/14/2013	I-131	<5.40E+01	0.00E+00	5.40E+01	WILDCHERRY
		Cs-134	<3.48E+01	0.00E+00	3.48E+01	
		Cs-137	<3.51E+01	0.00E+00	3.51E+01	
		Be-7	3.26E+02	1.27E+02	2.90E+02	
		K-40	3.10E+03	3.26E+02	3.14E+02	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 50 [ INDICATOR - SSE @ 0 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
258274	5/14/2013 - 5/14/2013	I-131	<5.43E+01	0.00E+00	5.43E+01	WAXMYRTLE
		Cs-134	<3.06E+01	0.00E+00	3.06E+01	
		Cs-137	<3.81E+01	0.00E+00	3.81E+01	
		Be-7	1.10E+03	1.77E+02	2.92E+02	
		K-40	5.47E+03	4.29E+02	3.67E+02	
258275	5/14/2013 - 5/14/2013	I-131	<1.76E+01	0.00E+00	1.76E+01	SASSAFRAS
		Cs-134	<1.10E+01	0.00E+00	1.10E+01	
		Cs-137	4.88E+01	7.54E+00	1.08E+01	
		Be-7	4.04E+02	5.75E+01	9.63E+01	
		K-40	3.95E+03	1.72E+02	1.19E+02	
260460	6/12/2013 - 6/12/2013	I-131	<3.46E+01	0.00E+00	3.46E+01	WAXMYRTLE
		Cs-134	<2.01E+01	0.00E+00	2.01E+01	
		Cs-137	<2.17E+01	0.00E+00	2.17E+01	
		Be-7	8.74E+02	1.15E+02	1.91E+02	
		K-40	4.10E+03	2.76E+02	1.87E+02	
260461	6/12/2013 - 6/12/2013	I-131	<3.72E+01	0.00E+00	3.72E+01	WILDCHERRY
		Cs-134	<2.09E+01	0.00E+00	2.09E+01	
		Cs-137	<2.94E+01	0.00E+00	2.94E+01	
		Be-7	1.78E+02	9.28E+01	1.54E+02	
		K-40	3.23E+03	2.43E+02	4.93E+01	
260462	6/12/2013 - 6/12/2013	I-131	<3.52E+01	0.00E+00	3.52E+01	SASSAFRAS
		Cs-134	<1.97E+01	0.00E+00	1.97E+01	
		Cs-137	5.50E+01	1.14E+01	1.55E+01	
		Be-7	7.44E+02	1.09E+02	1.83E+02	
		K-40	3.72E+03	2.71E+02	5.35E+01	
263016	7/10/2013 - 7/10/2013	I-131	<2.98E+01	0.00E+00	2.98E+01	WAXMYRTLE
		Cs-134	<2.12E+01	0.00E+00	2.12E+01	
		Cs-137	<2.95E+01	0.00E+00	2.95E+01	
		Be-7	1.50E+03	1.66E+02	1.66E+02	
		K-40	3.55E+03	2.79E+02	1.99E+02	
263017	7/10/2013 - 7/10/2013	I-131	<2.58E+01	0.00E+00	2.58E+01	WILDCHERRY
		Cs-134	<1.69E+01	0.00E+00	1.69E+01	
		Cs-137	<2.53E+01	0.00E+00	2.53E+01	
		Be-7	1.59E+03	1.16E+02	1.38E+02	
		K-40	2.80E+03	1.98E+02	2.03E+02	
263018	7/10/2013 - 7/10/2013	I-131	<1.93E+01	0.00E+00	1.93E+01	SASSAFRAS
		Cs-134	<1.19E+01	0.00E+00	1.19E+01	
		Cs-137	4.68E+01	8.62E+00	1.25E+01	
		Be-7	3.13E+03	1.30E+02	1.14E+02	
		K-40	2.59E+03	1.64E+02	1.13E+02	
265360	8/6/2013 - 8/6/2013	I-131	<2.16E+01	0.00E+00	2.16E+01	WAXMYRTLE
		Cs-134	<1.51E+01	0.00E+00	1.51E+01	
		Cs-137	<1.76E+01	0.00E+00	1.76E+01	
		Be-7	9.65E+02	1.01E+02	1.32E+02	
		K-40	2.17E+03	1.88E+02	1.69E+02	
265361	8/6/2013 - 8/6/2013	I-131	<9.99E+00	0.00E+00	9.99E+00	SASSAFRAS
		Cs-134	<6.07E+00	0.00E+00	6.07E+00	
		Cs-137	3.78E+01	4.67E+00	6.20E+00	
		Be-7	2.60E+03	6.93E+01	5.36E+01	
		K-40	2.85E+03	1.08E+02	6.54E+01	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 50 [ INDICATOR - SSE @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
265362	8/6/2013 - 8/6/2013	I-131	<3.81E+01	0.00E+00	3.81E+01	WILDCHERRY
		Cs-134	<2.10E+01	0.00E+00	2.10E+01	
		Cs-137	<2.14E+01	0.00E+00	2.14E+01	
		Be-7	1.09E+03	1.39E+02	1.87E+02	
		K-40	3.59E+03	3.13E+02	2.83E+02	
270806	9/11/2013 - 9/11/2013	I-131	<2.27E+01	0.00E+00	2.27E+01	WAXMYRTLE
		Cs-134	<1.31E+01	0.00E+00	1.31E+01	
		Cs-137	2.48E+01	7.98E+00	1.32E+01	
		Be-7	6.76E+02	8.66E+01	1.30E+02	
		K-40	2.49E+03	1.63E+02	1.34E+02	
270807	9/11/2013 - 9/11/2013	I-131	<1.90E+01	0.00E+00	1.90E+01	SASSAFRAS
		Cs-134	<1.02E+01	0.00E+00	1.02E+01	
		Cs-137	6.79E+01	8.09E+00	1.07E+01	
		Be-7	1.47E+03	8.89E+01	8.52E+01	
		K-40	3.28E+03	1.47E+02	9.69E+01	
270808	9/11/2013 - 9/11/2013	I-131	<4.55E+01	0.00E+00	4.55E+01	WILDCHERRY
		Cs-134	<2.10E+01	0.00E+00	2.10E+01	
		Cs-137	<4.07E+01	0.00E+00	4.07E+01	
		Be-7	<3.49E+02	0.00E+00	3.49E+02	
		K-40	3.26E+03	3.36E+02	3.62E+02	

Sample Point 51 [ INDICATOR - SSW @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
258277	5/14/2013 - 5/14/2013	I-131	<4.28E+01	0.00E+00	4.28E+01	WILDCHERRY
		Cs-134	<2.86E+01	0.00E+00	2.86E+01	
		Cs-137	<3.50E+01	0.00E+00	3.50E+01	
		Be-7	5.32E+02	1.18E+02	2.22E+02	
		K-40	3.22E+03	3.66E+02	4.48E+02	
258278	5/14/2013 - 5/14/2013	I-131	<2.76E+01	0.00E+00	2.76E+01	WAXMYRTLE
		Cs-134	<1.51E+01	0.00E+00	1.51E+01	
		Cs-137	<1.76E+01	0.00E+00	1.76E+01	
		Be-7	8.32E+02	1.04E+02	1.46E+02	
		K-40	3.03E+03	2.42E+02	2.21E+02	
258279	5/14/2013 - 5/14/2013	I-131	<4.06E+01	0.00E+00	4.06E+01	SASSAFRAS
		Cs-134	<3.05E+01	0.00E+00	3.05E+01	
		Cs-137	<2.93E+01	0.00E+00	2.93E+01	
		Be-7	4.71E+02	1.15E+02	2.65E+02	
		K-40	3.12E+03	3.74E+02	4.11E+02	
260463	6/12/2013 - 6/12/2013	I-131	<5.24E+01	0.00E+00	5.24E+01	WAXMYRTLE
		Cs-134	<2.60E+01	0.00E+00	2.60E+01	
		Cs-137	<3.66E+01	0.00E+00	3.66E+01	
		Be-7	1.26E+03	1.88E+02	2.58E+02	
		K-40	2.37E+03	3.08E+02	2.54E+02	
260464	6/12/2013 - 6/12/2013	I-131	<3.88E+01	0.00E+00	3.88E+01	WILDCHERRY
		Cs-134	<1.95E+01	0.00E+00	1.95E+01	
		Cs-137	<2.62E+01	0.00E+00	2.62E+01	
		Be-7	2.32E+02	9.35E+01	1.58E+02	
		K-40	3.86E+03	2.52E+02	1.71E+02	
260465	6/12/2013 - 6/12/2013	I-131	<4.30E+01	0.00E+00	4.30E+01	SASSAFRAS
		Cs-134	<2.12E+01	0.00E+00	2.12E+01	
		Cs-137	3.85E+01	9.28E+00	2.17E+01	
		Be-7	7.60E+02	1.47E+02	2.06E+02	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 51 [ INDICATOR - SSW @ 0 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
260465	6/12/2013 - 6/12/2013	K-40	3.85E+03	3.16E+02	2.52E+02	SASSAFRAS
263019	7/10/2013 - 7/10/2013	I-131	<4.39E+01	0.00E+00	4.39E+01	WAXMYRTLE
		Cs-134	<2.55E+01	0.00E+00	2.55E+01	
		Cs-137	<3.33E+01	0.00E+00	3.33E+01	
		Be-7	1.72E+03	2.01E+02	2.49E+02	
		K-40	4.09E+03	3.62E+02	3.82E+02	
263021	7/10/2013 - 7/10/2013	I-131	<3.33E+01	0.00E+00	3.33E+01	WILDCHERRY
		Cs-134	<2.28E+01	0.00E+00	2.28E+01	
		Cs-137	<2.76E+01	0.00E+00	2.76E+01	
		Be-7	3.35E+02	1.03E+02	2.18E+02	
		K-40	2.42E+03	2.83E+02	3.09E+02	
263022	7/10/2013 - 7/10/2013	I-131	<1.50E+01	0.00E+00	1.50E+01	SASSAFRAS
		Cs-134	<9.11E+00	0.00E+00	9.11E+00	
		Cs-137	7.72E+01	7.02E+00	9.60E+00	
		Be-7	9.51E+02	7.27E+01	9.07E+01	
		K-40	3.44E+03	1.45E+02	1.06E+02	
265363	8/6/2013 - 8/6/2013	I-131	<3.08E+01	0.00E+00	3.08E+01	WAXMYRTLE
		Cs-134	<1.65E+01	0.00E+00	1.65E+01	
		Cs-137	<2.37E+01	0.00E+00	2.37E+01	
		Be-7	2.22E+03	1.35E+02	1.55E+02	
		K-40	2.70E+03	2.25E+02	2.02E+02	
265364	8/6/2013 - 8/6/2013	I-131	<1.25E+01	0.00E+00	1.25E+01	SASSAFRAS
		Cs-134	<7.46E+00	0.00E+00	7.46E+00	
		Cs-137	5.14E+01	5.18E+00	8.08E+00	
		Be-7	1.62E+03	6.14E+01	6.72E+01	
		K-40	2.48E+03	9.67E+01	7.12E+01	
265365	8/6/2013 - 8/6/2013	I-131	<2.72E+01	0.00E+00	2.72E+01	WILDCHERRY
		Cs-134	<2.29E+01	0.00E+00	2.29E+01	
		Cs-137	<2.16E+01	0.00E+00	2.16E+01	
		Be-7	7.59E+02	1.26E+02	1.63E+02	
		K-40	2.24E+03	2.47E+02	1.73E+02	
270809	9/11/2013 - 9/11/2013	I-131	<3.69E+01	0.00E+00	3.69E+01	WAXMYRTLE
		Cs-134	<1.79E+01	0.00E+00	1.79E+01	
		Cs-137	<2.88E+01	0.00E+00	2.88E+01	
		Be-7	1.20E+03	1.23E+02	1.71E+02	
		K-40	2.64E+03	2.40E+02	2.16E+02	
270810	9/11/2013 - 9/11/2013	I-131	<1.74E+01	0.00E+00	1.74E+01	SASSAFRAS
		Cs-134	<1.01E+01	0.00E+00	1.01E+01	
		Cs-137	4.38E+01	8.94E+00	1.16E+01	
		Be-7	1.52E+03	9.21E+01	8.85E+01	
		K-40	2.75E+03	1.53E+02	1.31E+02	
270811	9/11/2013 - 9/11/2013	I-131	<3.48E+01	0.00E+00	3.48E+01	WILDCHERRY
		Cs-134	<1.67E+01	0.00E+00	1.67E+01	
		Cs-137	<2.59E+01	0.00E+00	2.59E+01	
		Be-7	3.96E+02	9.39E+01	1.90E+02	
		K-40	5.36E+03	3.22E+02	2.84E+02	
<b>Sample Point 52 [ CONTROL - W @ 10 miles ]</b>						
258280	5/14/2013 - 5/14/2013	I-131	<3.00E+01	0.00E+00	3.00E+01	WILDCHERRY
		Cs-134	<1.92E+01	0.00E+00	1.92E+01	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 52 [ CONTROL - W @ 10 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
258280	5/14/2013 - 5/14/2013	Cs-137	<2.50E+01	0.00E+00	2.50E+01	WILDCHERRY
		Be-7	5.95E+02	1.10E+02	1.62E+02	
		K-40	3.52E+03	2.57E+02	1.95E+02	
258281	5/14/2013 - 5/14/2013	I-131	<2.01E+01	0.00E+00	2.01E+01	WAXMYRTLE
		Cs-134	<1.14E+01	0.00E+00	1.14E+01	
		Cs-137	3.12E+01	8.03E+00	1.42E+01	
		Be-7	4.39E+02	7.62E+01	8.77E+01	
		K-40	2.74E+03	1.83E+02	1.36E+02	
258282	5/14/2013 - 5/14/2013	I-131	<3.34E+01	0.00E+00	3.34E+01	SASSAFRAS
		Cs-134	<1.52E+01	0.00E+00	1.52E+01	
		Cs-137	3.65E+01	9.95E+00	1.92E+01	
		Be-7	4.67E+02	8.38E+01	1.66E+02	
		K-40	4.22E+03	2.56E+02	2.11E+02	
260466	6/12/2013 - 6/12/2013	I-131	<4.56E+01	0.00E+00	4.56E+01	WAXMYRTLE
		Cs-134	<2.62E+01	0.00E+00	2.62E+01	
		Cs-137	<4.08E+01	0.00E+00	4.08E+01	
		Be-7	4.21E+02	1.33E+02	2.37E+02	
		K-40	2.78E+03	2.92E+02	4.27E+02	
260467	6/12/2013 - 6/12/2013	I-131	<4.79E+01	0.00E+00	4.79E+01	WILDCHERRY
		Cs-134	<2.13E+01	0.00E+00	2.13E+01	
		Cs-137	2.43E+01	1.15E+01	2.60E+01	
		Be-7	2.73E+02	1.14E+02	1.72E+02	
		K-40	4.13E+03	2.96E+02	1.98E+02	
260468	6/12/2013 - 6/12/2013	I-131	<4.81E+01	0.00E+00	4.81E+01	SASSAFRAS
		Cs-134	<9.68E+00	0.00E+00	9.68E+00	
		Cs-137	5.23E+01	6.19E+00	9.24E+00	
		Be-7	5.86E+02	5.83E+01	1.06E+02	
		K-40	3.27E+03	1.36E+02	1.11E+02	
263023	7/10/2013 - 7/10/2013	I-131	<3.96E+01	0.00E+00	3.96E+01	WAXMYRTLE
		Cs-134	<2.63E+01	0.00E+00	2.63E+01	
		Cs-137	<3.85E+01	0.00E+00	3.85E+01	
		Be-7	1.18E+03	1.64E+02	2.42E+02	
		K-40	3.52E+03	2.82E+02	2.52E+02	
263024	7/10/2013 - 7/10/2013	I-131	<2.19E+01	0.00E+00	2.19E+01	WILDCHERRY
		Cs-134	<1.42E+01	0.00E+00	1.42E+01	
		Cs-137	4.48E+01	7.61E+00	1.58E+01	
		Be-7	1.05E+03	1.07E+02	1.36E+02	
		K-40	3.92E+03	2.23E+02	2.11E+02	
263025	7/10/2013 - 7/10/2013	I-131	<2.58E+01	0.00E+00	2.58E+01	SASSAFRAS
		Cs-134	<1.05E+01	0.00E+00	1.05E+01	
		Cs-137	1.62E+02	8.63E+00	1.07E+01	
		Be-7	1.94E+03	8.00E+01	9.02E+01	
		K-40	2.54E+03	1.24E+02	1.02E+02	
265366	8/6/2013 - 8/6/2013	I-131	<3.75E+01	0.00E+00	3.75E+01	WAXMYRTLE
		Cs-134	<2.27E+01	0.00E+00	2.27E+01	
		Cs-137	<2.28E+01	0.00E+00	2.28E+01	
		Be-7	6.16E+02	9.00E+01	1.51E+02	
		K-40	1.77E+03	2.30E+02	2.85E+02	
265367	8/6/2013 - 8/6/2013	I-131	<2.74E+01	0.00E+00	2.74E+01	SASSAFRAS

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 52 [ CONTROL - W @ 10 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
265367	8/6/2013 - 8/6/2013					SASSAFRAS
		Cs-134	<1.58E+01	0.00E+00	1.58E+01	
		Cs-137	<2.56E+01	0.00E+00	2.56E+01	
		Be-7	8.57E+02	9.68E+01	1.71E+02	
		K-40	1.86E+03	2.18E+02	2.00E+02	
265368	8/6/2013 - 8/6/2013					WILDCHERRY
		I-131	<1.08E+01	0.00E+00	1.08E+01	
		Cs-134	<5.75E+00	0.00E+00	5.75E+00	
		Cs-137	3.82E+01	3.66E+00	5.63E+00	
		Be-7	8.50E+02	4.90E+01	5.11E+01	
270812	9/11/2013 - 9/11/2013					WAXMYRTLE
		I-131	<1.71E+01	0.00E+00	1.71E+01	
		Cs-134	<8.17E+00	0.00E+00	8.17E+00	
		Cs-137	<9.64E+00	0.00E+00	9.64E+00	
		Be-7	1.07E+03	6.04E+01	8.55E+01	
270813	9/11/2013 - 9/11/2013					SASSAFRAS
		I-131	<1.87E+01	0.00E+00	1.87E+01	
		Cs-134	<9.31E+00	0.00E+00	9.31E+00	
		Cs-137	3.54E+01	7.10E+00	1.04E+01	
		Be-7	2.48E+03	9.79E+01	1.06E+02	
270814	9/11/2013 - 9/11/2013					WILDCHERRY
		I-131	<2.31E+01	0.00E+00	2.31E+01	
		Cs-134	<1.88E+01	0.00E+00	1.88E+01	
		Cs-137	<1.80E+01	0.00E+00	1.80E+01	
		Be-7	2.40E+03	1.35E+02	1.41E+02	
258283	5/14/2013 - 5/14/2013					WILDCHERRY
		I-131	<3.76E+01	0.00E+00	3.76E+01	
		Cs-134	<2.12E+01	0.00E+00	2.12E+01	
		Cs-137	2.61E+01	1.14E+01	2.14E+01	
		Be-7	5.99E+02	1.01E+02	1.87E+02	
258284	5/14/2013 - 5/14/2013					WAXMYRTLE
		I-131	<2.67E+01	0.00E+00	2.67E+01	
		Cs-134	<1.57E+01	0.00E+00	1.57E+01	
		Cs-137	<2.14E+01	0.00E+00	2.14E+01	
		Be-7	8.25E+02	8.43E+01	1.13E+02	
258285	5/14/2013 - 5/14/2013					SASSAFRAS
		I-131	<2.12E+01	0.00E+00	2.12E+01	
		Cs-134	<1.29E+01	0.00E+00	1.29E+01	
		Cs-137	1.13E+02	1.14E+01	1.17E+01	
		Be-7	6.45E+02	8.21E+01	1.01E+02	
260469	6/12/2013 - 6/12/2013					WAXMYRTLE
		I-131	<4.59E+01	0.00E+00	4.59E+01	
		Cs-134	<1.98E+01	0.00E+00	1.98E+01	
		Cs-137	3.73E+01	1.04E+01	2.48E+01	
		Be-7	8.78E+02	1.02E+02	2.15E+02	
260470	6/12/2013 - 6/12/2013					WILDCHERRY
		I-131	<3.34E+01	0.00E+00	3.34E+01	
		Cs-134	<2.55E+01	0.00E+00	2.55E+01	
		Cs-137	<3.43E+01	0.00E+00	3.43E+01	
		Be-7	4.91E+02	1.25E+02	2.22E+02	
		K-40	3.30E+03	2.85E+02	1.80E+02	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.





# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 62 [ INDICATOR - SE @ 0 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
260471	6/12/2013 - 6/12/2013	I-131	<5.17E+01	0.00E+00	5.17E+01	SASSAFRAS
		Cs-134	<2.57E+01	0.00E+00	2.57E+01	
		Cs-137	4.30E+01	1.62E+01	2.68E+01	
		Be-7	1.32E+03	1.38E+02	1.78E+02	
		K-40	3.37E+03	3.48E+02	3.57E+02	
263026	7/10/2013 - 7/10/2013	I-131	<4.16E+01	0.00E+00	4.16E+01	WAXMYRTLE
		Cs-134	<1.79E+01	0.00E+00	1.79E+01	
		Cs-137	1.72E+01	9.15E+00	1.56E+01	
		Be-7	1.84E+03	1.20E+02	1.50E+02	
		K-40	3.06E+03	2.05E+02	1.89E+02	
263027	7/10/2013 - 7/10/2013	I-131	<3.62E+01	0.00E+00	3.62E+01	WILDCHERRY
		Cs-134	<2.07E+01	0.00E+00	2.07E+01	
		Cs-137	<2.84E+01	0.00E+00	2.84E+01	
		Be-7	1.16E+03	1.36E+02	1.82E+02	
		K-40	3.85E+03	3.25E+02	2.81E+02	
263028	7/10/2013 - 7/10/2013	I-131	<1.84E+01	0.00E+00	1.84E+01	SASSAFRAS
		Cs-134	<1.07E+01	0.00E+00	1.07E+01	
		Cs-137	3.62E+01	7.26E+00	1.16E+01	
		Be-7	1.69E+03	8.61E+01	1.01E+02	
		K-40	3.38E+03	1.42E+02	1.21E+02	
265369	8/6/2013 - 8/6/2013	I-131	<3.48E+01	0.00E+00	3.48E+01	WAXMYRTLE
		Cs-134	<1.72E+01	0.00E+00	1.72E+01	
		Cs-137	<2.80E+01	0.00E+00	2.80E+01	
		Be-7	1.16E+03	1.48E+02	2.07E+02	
		K-40	2.53E+03	2.68E+02	3.54E+02	
265370	8/6/2013 - 8/6/2013	I-131	<1.43E+01	0.00E+00	1.43E+01	SASSAFRAS
		Cs-134	<5.85E+00	0.00E+00	5.85E+00	
		Cs-137	3.39E+01	3.85E+00	6.98E+00	
		Be-7	2.29E+03	6.72E+01	6.77E+01	
		K-40	2.47E+03	9.44E+01	7.64E+01	
265371	8/6/2013 - 8/6/2013	I-131	<2.22E+01	0.00E+00	2.22E+01	WILDCHERRY
		Cs-134	<1.92E+01	0.00E+00	1.92E+01	
		Cs-137	<2.17E+01	0.00E+00	2.17E+01	
		Be-7	9.36E+02	1.38E+02	1.52E+02	
		K-40	3.09E+03	2.83E+02	2.17E+02	
270815	9/11/2013 - 9/11/2013	I-131	<3.50E+01	0.00E+00	3.50E+01	WAXMYRTLE
		Cs-134	<2.22E+01	0.00E+00	2.22E+01	
		Cs-137	<2.27E+01	0.00E+00	2.27E+01	
		Be-7	1.22E+03	1.57E+02	2.07E+02	
		K-40	3.15E+03	2.42E+02	1.96E+02	
270816	9/11/2013 - 9/11/2013	I-131	<3.16E+01	0.00E+00	3.16E+01	SASSAFRAS
		Cs-134	<2.06E+01	0.00E+00	2.06E+01	
		Cs-137	<4.30E+01	0.00E+00	4.30E+01	
		Be-7	1.66E+03	1.85E+02	2.03E+02	
		K-40	3.91E+03	3.78E+02	3.30E+02	
270817	9/11/2013 - 9/11/2013	I-131	<2.71E+01	0.00E+00	2.71E+01	WILDCHERRY
		Cs-134	<1.97E+01	0.00E+00	1.97E+01	
		Cs-137	<2.09E+01	0.00E+00	2.09E+01	
		Be-7	4.86E+02	8.89E+01	1.45E+02	
		K-40	3.72E+03	2.61E+02	2.59E+02	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 67 [ INDICATOR - S @ 0 miles ]

Sample ID	Sample Dates	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype
258286	5/14/2013 - 5/14/2013	I-131	<2.69E+01	0.00E+00	2.69E+01	WILDCHERRY
		Cs-134	<1.32E+01	0.00E+00	1.32E+01	
		Cs-137	5.56E+01	7.57E+00	1.39E+01	
		Be-7	2.40E+02	6.89E+01	1.20E+02	
		K-40	2.73E+03	1.81E+02	9.16E+01	
258287	5/14/2013 - 5/14/2013	I-131	<5.74E+01	0.00E+00	5.74E+01	WAXMYRTLE
		Cs-134	<2.27E+01	0.00E+00	2.27E+01	
		Cs-137	<3.35E+01	0.00E+00	3.35E+01	
		Be-7	1.65E+03	2.21E+02	2.78E+02	
		K-40	1.96E+03	2.69E+02	4.28E+02	
258288	5/14/2013 - 5/14/2013	I-131	<3.69E+01	0.00E+00	3.69E+01	SASSAFRAS
		Cs-134	<1.89E+01	0.00E+00	1.89E+01	
		Cs-137	1.85E+02	1.68E+01	2.40E+01	
		Be-7	7.56E+02	1.27E+02	1.82E+02	
		K-40	4.12E+03	2.86E+02	2.26E+02	
260472	6/12/2013 - 6/12/2013	I-131	<3.37E+01	0.00E+00	3.37E+01	WAXMYRTLE
		Cs-134	<1.59E+01	0.00E+00	1.59E+01	
		Cs-137	2.08E+01	7.71E+00	1.91E+01	
		Be-7	5.51E+02	1.21E+02	1.62E+02	
		K-40	1.36E+03	1.95E+02	2.02E+02	
260473	6/12/2013 - 6/12/2013	I-131	<2.67E+01	0.00E+00	2.67E+01	WILDCHERRY
		Cs-134	<1.80E+01	0.00E+00	1.80E+01	
		Cs-137	5.28E+01	1.10E+01	2.04E+01	
		Be-7	4.84E+02	1.09E+02	1.57E+02	
		K-40	2.57E+03	2.23E+02	2.43E+02	
260474	6/12/2013 - 6/12/2013	I-131	<3.63E+01	0.00E+00	3.63E+01	SASSAFRAS
		Cs-134	<2.21E+01	0.00E+00	2.21E+01	
		Cs-137	<2.78E+01	0.00E+00	2.78E+01	
		Be-7	5.85E+02	1.46E+02	2.09E+02	
		K-40	4.12E+03	2.87E+02	1.44E+02	
263029	7/10/2013 - 7/10/2013	I-131	<3.88E+01	0.00E+00	3.88E+01	WAXMYRTLE
		Cs-134	<2.30E+01	0.00E+00	2.30E+01	
		Cs-137	2.66E+01	1.01E+01	3.06E+01	
		Be-7	6.26E+02	1.59E+02	2.34E+02	
		K-40	1.37E+03	2.34E+02	3.10E+02	
263030	7/10/2013 - 7/10/2013	I-131	<1.30E+01	0.00E+00	1.30E+01	WILDCHERRY
		Cs-134	<7.91E+00	0.00E+00	7.91E+00	
		Cs-137	4.71E+01	5.53E+00	9.15E+00	
		Be-7	9.28E+02	5.88E+01	7.39E+01	
		K-40	2.45E+03	1.11E+02	9.34E+01	
263031	7/10/2013 - 7/10/2013	I-131	<2.26E+01	0.00E+00	2.26E+01	SASSAFRAS
		Cs-134	<1.22E+01	0.00E+00	1.22E+01	
		Cs-137	3.66E+01	7.54E+00	1.22E+01	
		Be-7	1.90E+03	1.08E+02	1.13E+02	
		K-40	1.93E+03	1.68E+02	1.54E+02	
265372	8/6/2013 - 8/6/2013	I-131	<4.42E+01	0.00E+00	4.42E+01	WAXMYRTLE
		Cs-134	<2.63E+01	0.00E+00	2.63E+01	
		Cs-137	<3.28E+01	0.00E+00	3.28E+01	
		Be-7	2.30E+03	1.94E+02	2.48E+02	
		K-40	2.71E+03	3.05E+02	3.98E+02	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error, results generated by EnRad Laboratory display 1 sigma error.



# H. B. Robinson Radiological Environmental Monitoring Analysis Report - 2013 (Appendix E)

Media Type: VEGETATION Concentration (Activity): pCi/kg

Sample Point 67 [ INDICATOR - S @ 0 miles ]

Sample ID:	Sample Dates:	Nuclide	Activity	Sigma Error <sup>(1)</sup>	LLD	Subtype:
265373	8/6/2013 - 8/6/2013	I-131	<1.44E+01	0.00E+00	1.44E+01	SASSAFRAS
		Cs-134	<9.36E+00	0.00E+00	9.36E+00	
		Cs-137	3.08E+01	6.77E+00	9.38E+00	
		Be-7	1.73E+03	8.89E+01	7.50E+01	
		K-40	2.67E+03	1.42E+02	9.33E+01	
265374	8/6/2013 - 8/6/2013	I-131	<3.49E+01	0.00E+00	3.49E+01	WILDCHERRY
		Cs-134	<1.71E+01	0.00E+00	1.71E+01	
		Cs-137	<2.40E+01	0.00E+00	2.40E+01	
		Be-7	5.75E+02	9.86E+01	1.77E+02	
		K-40	3.22E+03	2.72E+02	3.31E+02	
270818	9/11/2013 - 9/11/2013	I-131	<3.90E+01	0.00E+00	3.90E+01	WAXMYRTLE
		Cs-134	<2.21E+01	0.00E+00	2.21E+01	
		Cs-137	<3.00E+01	0.00E+00	3.00E+01	
		Be-7	4.41E+02	1.04E+02	1.94E+02	
		K-40	3.67E+03	3.46E+02	3.26E+02	
270819	9/11/2013 - 9/11/2013	I-131	<2.19E+01	0.00E+00	2.19E+01	SASSAFRAS
		Cs-134	<9.82E+00	0.00E+00	9.82E+00	
		Cs-137	2.66E+01	6.08E+00	1.10E+01	
		Be-7	1.13E+03	5.81E+01	8.97E+01	
		K-40	4.32E+03	1.50E+02	8.97E+01	
270820	9/11/2013 - 9/11/2013	I-131	<2.18E+01	0.00E+00	2.18E+01	WILDCHERRY
		Cs-134	<8.19E+00	0.00E+00	8.19E+00	
		Cs-137	1.70E+01	7.45E+00	1.04E+01	
		Be-7	6.61E+02	5.18E+01	7.55E+01	
		K-40	4.59E+03	1.42E+02	7.82E+01	

(1) Analysis results generated by Harris Energy and Environmental Center display 2 sigma error; results generated by EnRad Laboratory display 1 sigma error.



**APPENDIX F**

**ERRATA TO  
PREVIOUS REPORTS**

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# **APPENDIX F**

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## **ERRATA TO THE 2013 AREOR**

There are no errata to be appended to the 2013 AREOR.