Table 5: Cumulartive Effects Assessment - Operations in Phases 3 and 4

RWDI# 2202166

Modelled Values & Frequency of Excursions above the Relevant Criteria

Days of Valid Meteorological Data: 1745

Relevant Criteria:			
	TSP	120	µg/m³ 24-Hour AAQC
		60	µg/m³ Annual AAQC
	PM_{10}	50	µg/m³ Interim AAQC
	$PM_{2.5}$	27	µg/m³ 24-Hour CAAQS
		8.8	µg/m³ Annual CAAQS
	Silica	5	µg/m³ AAQC
	NO_2	400	µg/m³ 1-Hour AAQC
		200	µg/m³ 24-Hour AAQC

Background Concentrations (90th Percentile, all except O_3) (O_3 99th percentile)			
	TSP	44	µg/m³ (24-hour)
		22	µg/m³ (Annual)
	PM_{10}	24	µg/m³ (24-hour)
	$PM_{2.5}$	13	µg/m³ (24-hour)
		6.6	µg/m³ (Annual)
	Silica	1.5	µg/m³ (24-hour)
	NO_2	25	µg/m³ (1-hour)
		21	µg/m³ (24-hour)
	O_3	124	µg/m³ (1-hour)

Receptor		UTM Coordinates		Contaminant	Averaging Period	With No Background Concentration				With Additional Background Concentrations			
ID	Type	X (m)	Y (m)		(hours)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)
R01	Residence	638425	4750114	TSP	24	115	96%	0	0.0%	159	**132%**	**2**	**0.1%**
					Annual	7	12%	0	0.0%	29	49%	0	0.0%
				PM10	24	12	24%	0	0.0%	36	72%	0	0.0%
				PM2.5	24	6	21%	0	0.0%	19	69%	0	0.0%
					Annual	1	6%	0	0.0%	7	81%	0	0.0%
				Silica	24	2	36%	0	0.0%	3.3	66%	0	0.0%
				NO2	1	319	80%	0	0.0%	344	86%	0	0.0%
					24	47	24%	0	0.0%	68	34%	0	0.0%
R02	Church	638360	4750110	TSP	24	127	**106%**	**1**	**0.1%**	171	**143%**	**2**	**0.1%**
					Annual	6	11%	0	0.0%	28	47%	0	0.0%
				PM10	24	10	20%	0	0.0%	34	68%	0	0.0%
				PM2.5	24	6	23%	0	0.0%	19	71%	0	0.0%
					Annual	0	6%	0	0.0%	7	81%	0	0.0%
				Silica	24	2	40%	0	0.0%	3.5	70%	0	0.0%
				NO2	1	312	78%	0	0.0%	337	84%	0	0.0%
					24	52	26%	0	0.0%	73	36%	0	0.0%
R03	Residence	638256	4750109	TSP	24	128	**107%**	**1**	**0.1%**	172	**143%**	**1**	**0.1%**
					Annual	5	9%	0	0.0%	27	46%	0	0.0%
				PM10	24	9	17%	0	0.0%	33	65%	0	0.0%
				PM2.5	24	6	23%	0	0.0%	19	71%	0	0.0%
					Annual	0	5%	0	0.0%	7	80%	0	0.0%
				Silica	24	2	40%	0	0.0%	3.5	70%	0	0.0%
				NO2	1	334	83%	0	0.0%	359	90%	0	0.0%
					24	53	27%	0	0.0%	74	37%	0	0.0%

Receptor		UTM Coordinates		Contaminant	Averaging Period	With No Background Concentration				With Additional Background Concentrations			
ID	Type	X (m)	Y (m)		(hours)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)
R04	Residence	638287	4750108	TSP	24	130	**108%**	**1**	**0.1%**	174	**145%**	**2**	**0.1%**
					Annual	6	9%	0	0.0%	28	46%	0	0.0%
				PM10	24	9	18%	0	0.0%	33	66%	0	0.0%
				PM2.5	24	6	23%	0	0.0%	19	71%	0	0.0%
					Annual	0	5%	0	0.0%	7	80%	0	0.0%
				Silica	24	2	41%	0	0.0%	3.6	71%	0	0.0%
				NO2	1	331	83%	0	0.0%	356	89%	0	0.0%
					24	54	27%	0	0.0%	75	37%	0	0.0%
R05	Residence	638228	4750108	TSP	24	125	**104%**	**1**	**0.1%**	169	**141%**	**1**	**0.1%**
					Annual	5	9%	0	0.0%	27	45%	0	0.0%
				PM10	24	9	18%	0	0.0%	33	66%	0	0.0%
				PM2.5	24	6	22%	0	0.0%	19	71%	0	0.0%
					Annual	0	5%	0	0.0%	7	80%	0	0.0%
				Silica	24	2	40%	0	0.0%	3.5	70%	0	0.0%
				NO2	1	333	83%	0	0.0%	358	89%	0	0.0%
					24	53	26%	0	0.0%	74	37%	0	0.0%
R06	Residence	638203	4750110	TSP	24	122	**101%**	**1**	**0.1%**	166	**138%**	**1**	**0.1%**
					Annual	5	8%	0	0.0%	27	45%	0	0.0%
				PM10	24	10	19%	0	0.0%	34	67%	0	0.0%
				PM2.5	24	6	22%	0	0.0%	19	70%	0	0.0%
					Annual	0	5%	0	0.0%	7	80%	0	0.0%
				Silica	24	2	38%	0	0.0%	3.4	68%	0	0.0%
				NO2	1	329	82%	0	0.0%	354	88%	0	0.0%
					24	52	26%	0	0.0%	73	36%	0	0.0%
R07	Residence	638139	4750102	TSP	24	110	92%	0	0.0%	154	**128%**	**1**	**0.1%**
					Annual	5	8%	0	0.0%	27	44%	0	0.0%
				PM10	24	10	20%	0	0.0%	34	68%	0	0.0%
				PM2.5	24	5	20%	0	0.0%	18	68%	0	0.0%
					Annual	0	4%	0	0.0%	7	79%	0	0.0%
				Silica	24	2	35%	0	0.0%	3.2	65%	0	0.0%
				NO2	1	305	76%	0	0.0%	330	83%	0	0.0%
					24	47	24%	0	0.0%	68	34%	0	0.0%
R08	Residence	638104	4750105	TSP	24	103	86%	0	0.0%	147	**123%**	**1**	**0.1%**
					Annual	4	7%	0	0.0%	26	44%	0	0.0%
				PM10	24	8	17%	0	0.0%	32	65%	0	0.0%
				PM2.5	24	5	19%	0	0.0%	18	67%	0	0.0%
					Annual	0	4%	0	0.0%	7	79%	0	0.0%
				Silica	24	2	33%	0	0.0%	3.1	63%	0	0.0%
				NO2	1	293	73%	0	0.0%	318	79%	0	0.0%
					24	45	22%	0	0.0%	66	33%	0	0.0%

Receptor		UTM Coordinates		Contaminant	Averaging Period	With No Background Concentration				With Additional Background Concentrations			
ID	Type	X (m)	Y (m)		(hours)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)
R09	Residence	637990	4750082	TSP	24	76	63%	0	0.0%	120	100%	0	0.00%
					Annual	4	6%	0	0.0%	26	43%	0	0.0%
				PM10	24	9	18%	0	0.0%	33	66%	0	0.00%
				PM2.5	24	4	14%	0	0.0%	17	62%	0	0.0%
					Annual	0	4%	0	0.0%	7	79%	0	0.0%
				Silica	24	1	24%	0	0.0%	2.7	54%	0	0.0%
				NO2	1	297	74%	0	0.0%	322	80%	0	0.0%
					24	33	17%	0	0.0%	54	27%	0	0.0%
R10	Residence	637952	4750077	TSP	24	68	56%	0	0.0%	112	93%	0	0.0%
					Annual	4	6%	0	0.0%	26	43%	0	0.0%
				PM10	24	10	19%	0	0.0%	34	67%	0	0.0%
				PM2.5	24	3	12%	0	0.0%	16	61%	0	0.0%
					Annual	0	3%	0	0.0%	7	78%	0	0.0%
				Silica	24	1	21%	0	0.0%	2.6	51%	0	0.0%
				NO2	1	299	75%	0	0.0%	324	81%	0	0.0%
					24	30	15%	0	0.0%	51	25%	0	0.0%
R11	Church	637441	4750189	TSP	24	41	34%	0	0.0%	85	71%	0	0.0%
					Annual	2	3%	0	0.0%	24	40%	0	0.0%
				PM10	24	10	20%	0	0.0%	34	68%	0	0.0%
				PM2.5	24	2	7%	0	0.0%	15	56%	0	0.0%
					Annual	0	2%	0	0.0%	7	77%	0	0.0%
				Silica	24	1	12%	0	0.0%	2.1	42%	0	0.0%
				NO2	1	227	57%	0	0.0%	252	63%	0	0.0%
					24	18	9%	0	0.0%	39	20%	0	0.0%
R12	Residence	637471	4750310	TSP	24	80	66%	0	0.0%	124	**103%**	**1**	**0.1%**
					Annual	3	4%	0	0.0%	25	41%	0	0.0%
				PM10	24	29	57%	0	0.0%	53	**105%**	**1**	**0.1%**
				PM2.5	24	3	11%	0	0.0%	16	59%	0	0.0%
					Annual	0	3%	0	0.0%	7	78%	0	0.0%
				Silica	24	2	43%	0	0.0%	3.7	73%	0	0.0%
				NO2	1	196	49%	0	0.0%	221	55%	0	0.0%
					24	25	12%	0	0.0%	46	23%	0	0.0%
R13	Residence	637452	4750415	TSP	24	71	59%	0	0.0%	115	96%	0	0.0%
					Annual	3	5%	0	0.0%	25	42%	0	0.0%
				PM10	24	25	50%	0	0.0%	49	98%	0	0.0%
				PM2.5	24	4	13%	0	0.0%	17	62%	0	0.0%
					Annual	0	3%	0	0.0%	7	78%	0	0.0%
				Silica	24	1	30%	0	0.0%	3.0	60%	0	0.0%
				NO2	1	194	49%	0	0.0%	219	55%	0	0.0%
					24	24	12%	0	0.0%	45	23%	0	0.0%

Receptor		UTM Coordinates		Contaminant	Averaging Period	With No Background Concentration				With Additional Background Concentrations			
ID	Type	X (m)	Y (m)		(hours)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)	Maximum Predicted 24-Hour Concentration (µg/m³)	Percentage of Revelant Criteria (%)	Number of Predicted Excursions Above Criteria over 5 Years	Frequency of Predicted Excursions Above Criteria (%)
R14	Residence	637457	4750591	TSP	24	105	88%	0	0.0%	149	**124%**	**2**	**0.1%**
					Annual	3	5%	0	0.0%	25	42%	0	0.0%
				PM10	24	31	63%	0	0.0%	55	**111%**	**1**	**0.1%**
				PM2.5	24	5	19%	0	0.0%	18	67%	0	0.0%
					Annual	0	2%	0	0.0%	7	77%	0	0.0%
				Silica	24	2	39%	0	0.0%	3.4	69%	0	0.0%
				NO2	1	255	64%	0	0.0%	280	70%	0	0.0%
					24	45	22%	0	0.0%	66	33%	0	0.0%
R15	Residence	637437	4750858	TSP	24	62	52%	0	0.0%	106	89%	0	0.0%
					Annual	2	3%	0	0.0%	24	40%	0	0.0%
				PM10	24	11	22%	0	0.0%	35	70%	0	0.0%
				PM2.5	24	3	10%	0	0.0%	16	58%	0	0.0%
					Annual	0	2%	0	0.0%	7	77%	0	0.0%
				Silica	24	1	13%	0	0.0%	2.2	43%	0	0.0%
				NO2	1	224	56%	0	0.0%	249	62%	0	0.0%
					24	16	8%	0	0.0%	37	19%	0	0.0%
R16	Residence	638112	4751073	TSP	24	65	54%	0	0.0%	109	91%	0	0.0%
					Annual	3	4%	0	0.0%	25	41%	0	0.0%
				PM10	24	10	20%	0	0.0%	34	68%	0	0.0%
				PM2.5	24	3	11%	0	0.0%	16	60%	0	0.0%
					Annual	0	2%	0	0.0%	7	77%	0	0.0%
				Silica	24	1	16%	0	0.0%	2.3	46%	0	0.0%
				NO2	1	188	47%	0	0.0%	213	53%	0	0.0%
					24	30	15%	0	0.0%	51	25%	0	0.0%
R17	Residence	638288	4751083	TSP	24	69	58%	0	0.0%	113	94%	0	0.0%
					Annual	3	5%	0	0.0%	25	41%	0	0.0%
				PM10	24	11	23%	0	0.0%	35	71%	0	0.0%
				PM2.5	24	3	11%	0	0.0%	16	60%	0	0.0%
					Annual	0	2%	0	0.0%	7	77%	0	0.0%
				Silica	24	1	18%	0	0.0%	2.4	48%	0	0.0%
				NO2	1	231	58%	0	0.0%	256	64%	0	0.0%
					24	26	13%	0	0.0%	47	23%	0	0.0%

Notes:

Values in bold indicate excursions above the relevant crtieria